

FLEXIBLE CONSENT CONDITIONS IN ACTION

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ABSTRACT

One benefit alliance projects provide is flexibility for major project delivery, and in doing so reframe the design context to better manage performance, cost and risk. Resource consent conditions can be too rigid, stifling this flexibility that is so important to getting the best out of an alliance procurement model. Consent conditions can be seen as risks to be managed which can often undermine the safeguards that they were intended to provide, even preventing opportunities for environmental betterment.

Resource consents should ensure that environmental effects are managed and mitigated, with statutory standing that owners, designers, constructors and regulators cannot brush aside or ignore. For consenting, design of a large infrastructure project is usually developed to a point that enables assessment of effects and the setting of appropriate conditions to manage them, rather than to a final detailed design stage. Any subsequent change then results in a need for costly and time-consuming rework, re-litigation and re-submission, either by variation or applying for new consents delaying implementation, in a delivery context where such delay has significant cost implications. This can be the case even if the effects on the environment remain essentially unchanged or are even reduced.

For the MacKays to Peka Peka Expressway Alliance, the stormwater team proposed just three stormwater consent conditions to achieve performance against agreed standards, instead of traditional prescriptive conditions. The process requires peer review and Council signoff of the design for each sector. These criteria, refined during consultation at the Board of Inquiry, focused on the key outcomes of flood risk, water quality and scour/erosion. This approach was considered to provide a good balance between design flexibility and certainty of environmental outcomes. Now that the detailed design and construction is underway, the effectiveness of this approach can be assessed.

KEYWORDS

Flexible consent conditions, performance standards.

PRESENTER PROFILE

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Malory is a senior planner with over seven years' experience and has specialist knowledge in regional consenting and compliance. Malory is currently managing the consents team for the MacKays to Peka Expressway Project leading the preparation of new consents and variations to consents/designation required through the construction phase of the project. As part of her role, Malory has become familiar with the many challenges of working on a major infrastructure project including consent condition implementation.

1 INTRODUCTION

1.1 PURPOSE

This paper will review the main issues that have arisen during the implementation of the MacKays to Peka Expressway's stormwater resource consent conditions, namely:

- certification of the design by two Councils i.e. dual certification;
- interpretation of the term "staging";
- flooding beyond the designation; and,
- interpretation of the term "in general accordance".

The conditions were drafted with the intent of allowing flexibility in design so valued in alliance projects. Now that the detailed design is almost complete and construction is well underway, the conditions can be assessed as to whether they have achieved the flexibility as intended.

1.2 THE PROJECT

The MacKays to Peka Peka (M2PP) Expressway project is one of the NZ Transport Agency's (the Agency) Wellington Northern Corridor 'Roads of National Significance' (RoNS) projects. When complete it will be approximately 16km of new four lane, median divided, Expressway running through the Kāpiti Coast from south of Raumati up to Peka Peka in the north. It is mostly off line from the existing SH1, essentially bypassing Paraparaumu and Waikanae town centres, and includes a new bridge over the Waikanae River as well as a number of interchanges and local road crossings.

As well as the Waikanae River the Expressway will cross fourteen other named watercourses as well as numerous other smaller drains, together requiring eight bridges (the three largest being 180, 134 and 60m long), several large span box culverts and numerous smaller pipe culvert crossings.

Of the 16km of Expressway, 3.8km is across low lying floodplains i.e. 24% of the Expressway is through flood prone land. It also threads its way past many remnant wetlands and the design includes over 30ha of new treatment and flood offset storage wetlands. The key stormwater issues for the Project are flooding, scour, water quality and flow attenuation.

The M2PP project is not being delivered as a traditional construction contract but by an alliance framework. An alliance involves the joint management of project challenges by the participants – typically comprising the owner, designer and constructor. It provides a different delivery approach from the more traditional forms of contracting and allows the

Agency to work more closely with partners. The M2PP Expressway Alliance comprises the Agency, Beca, Fletcher Construction, Higgins Group and Kāpiti Coast District Council (KCDC). This was the first time the Agency used an alliance framework for a project from its inception, through consenting and into construction.

Alliances generally favour larger highly complex projects, typically with high cost, tight programme and a high need for flexibility and innovation in both design and handling of risks. They promote collaborative and flexible work within the limits provided by Project's Minimum Requirements and resource consent conditions. Given this, it should follow that the more flexible the consent conditions (e.g. providing for performance outcomes rather than very specific works) the better the fit to the alliance model. For example, a culvert designed by performance is one where its final arrangement and size is determined by achieving a certain predefined upstream flood level effect rather than just specifying the diameter and length that it will be. The difference allows diameters to be significantly changed from that originally proposed, or even other measures taken such as drain diversions enabling the culvert to be deleted entirely, all providing that it results in the same flood effect. M2PP's stormwater conditions seek a balance between flexibility for "optioneering" during design and providing certainty of environmental outcomes.

2 M2PP DESIGNATION AND RESOURCE CONSENTS

2.1 Background

The route for the new Expressway required the Agency to lodge a Notice of Requirement (NOR) for a new designation over the corridor of land for the construction, operation and maintenance of the Expressway. In addition, a large suite of regional consents were also applied for. Traditionally these would have been obtained by application to KCDC and the Greater Wellington Regional Council (GWRC), however, as this project was deemed to be of national significance the statutory applications were lodged with the Environmental Protection Authority (EPA) and then referred to a Board of Inquiry (BOI) for determination.

On 12 April 2013, following a detailed hearing, the BOI confirmed the designation and granted the resource consents, authorising the construction, operation and maintenance of the Expressway. The suite of resource consents required for the Project included the following which fall under Wellington's Regional Plans and relate to hydrology and stormwater:

- the disturbance of river beds;
- placement of structures in and over river beds (e.g. culverts and bridges);
- removal of structures in river beds (e.g. culverts);
- river bed reclamation; and,
- temporary and permanent watercourse diversions.

The operational stormwater discharge from the Expressway, was confirmed as a permitted activity (under Rule 2 of the Wellington Regional Freshwater Plan) as the discharge met the conditions relating to water quality, erosion at the point of discharge and not altering the course of a natural stream or river. As such, no resource consents were required for operational discharges from the Expressway. However, for reasons discussed below, the project's consent conditions do include conditions relating to the stormwater discharges.

2.2 PROJECT STORMWATER CONSENT CONDITIONS

During the BOI, the Alliance recognised the need to explicitly state the design principles that enabled it to satisfy the permitted activity criteria for stormwater discharges and therefore proposed three comprehensive stormwater conditions be included in the Project's suite of consent conditions. This decision was influenced by the large number of BOI submissions on hydrology, water quality and flood effects.

These conditions were modified during conferencing to account for inputs from various submitters, Councils, experts, lawyers and planners. In particular, GWRC requested the conditions require the provision for further information to be submitted to them which resulted in a certification role for GWRC being included. The conditions also have a peer review requirement prior to certification which was strongly supported by GWRC as it provided them with certainty of a robust design without tying down their own resources to ensure it happens.

In talking to both Councils after the BOI decision, GWRC observed they had not intended all parts of the Project to be encompassed by this condition, only those areas that interacted with the Waikanae River and Waimeha Stream. However, due to the speed of the BOI and the high level of scrutiny that stormwater management received from submitters the final conditions reflected a 'blanket' certification requirement for the entire Project.

The resulting consent conditions in Table 1 are a reflection of the BOI hearing process, where multiple parties (submitters) had input into the wording of the conditions and the drafting occurred within very tight timeframes. They also include the amendments made after the BOI, reflecting the resolution of the implementation issues that have arisen over the last eighteen months of detailed design as discussed in more detail later in Section 3. However, overall the fundamental approach was met in agreeing a series of performance standards for the design with a structured and independent review process followed by certification by GWRC. Feedback from GWRC during the construction and condition implementation phase has been very positive with particular approval given for how peer review process has turned out.

Table 1: Current M2PP stormwater consent conditions.

Consent Condition	
SW.1	Operational stormwater discharge from the Expressway shall meet the following performance criteria:
	a) Expressway stormwater shall be treated before discharge to the receiving environment in accordance with the NZTA publication Stormwater Treatment Standard for State Highway Infrastructure, 2010, or equivalent industry standard methods;
	b) The peak rate of stormwater discharge from the Expressway at any point shall not exceed 80% (urban areas) or 100% (rural areas) of the pre Expressway peak discharge from the same footprint, in each of the 50%, 10% and 1% AEP critical duration storm events;
	c) Stormwater discharge structures shall be designed to avoid erosion

	of the waterway in the vicinity of the outfall; and
	d) Expressway stormwater runoff to the Kakariki Stream and the Ngarara Creek shall receive primary treatment using swales followed by secondary treatment using wetlands before discharge.
SW.2	The effects of the Expressway embankment, waterway crossings and stormwater discharge on flood risk shall be addressed in the following manner:
	a) Any loss of flood plain storage due to the fill embankment shall be offset by: <ul style="list-style-type: none"> i. provision of equivalent alternative flood storage volume; or ii. attenuating runoff; or iii. removing downstream constraints; or iv. a combination of the above
	b) Flood risk shall be assessed against the 1% AEP storm, with climate change to 2115 (mid-range) estimated and shall provide a sensitivity evaluation against high range climate change scenarios (to 2115).
	c) Culvert and bridge waterway crossings shall be designed so that any increase in flood risk in the 1% AEP storm is either: <ul style="list-style-type: none"> i. Contained within the designation, or ii. Contained generally within the designated flood hazard area and is no more than 50mm above existing flood levels. The combined effects of filling, waterway crossings and Expressway stormwater discharge shall be assessed through the use of hydrologic and hydraulic modelling. iii. where c) i) or ii) have not been met, the Manager may (at their discretion) certify the stormwater report required by (d), where the consent holder includes with that report the following: <ul style="list-style-type: none"> • The written approval of any landowner(s) who would be subject to a flood level that is greater than 50mm above existing flood levels. • A description of the location and the degree of flood level that is greater than 50mm above existing flood levels • Reasons and a discussion as to why c) i) or ii) has not been met; and • A description of the consultation with affected landowners about flood level effects.
	d) The stormwater management design and flood risk modelling for any works that might affect hydrology and flood risk shall be prepared for the Project according to the staging identified in the programme required under G.12 and a report on the design of those works shall be prepared for each stage. The report and modelling for each stage

	<p>shall be independently peer reviewed by a suitably qualified and experienced engineer agreed with GWRC and KCDC (at the cost of the Consent Holder) to ensure that the hydraulic modelling is appropriate and that the stormwater design and flood risk management meets the performance criteria set out in SW.1, SW.2 and SW.3. The report and the results of the peer review shall be provided to the Manager at least 15 working days prior to commencement of Works any works in that stage that might affect hydrology and flood risk (including embankments, waterway crossings and stormwater discharges, but not including stockpiles located within the 10% AEP flood plain for a period of less than 12 months or any stockpiles located outside the 10% AEP flood plain, provided in both cases that they do not impede any surface flow path (overland or waterway)). The Consent Holder shall implement any recommendations in the peer review or an alternative design detail agreed with the peer reviewer and certified by the Manager. Works in the relevant stage that might affect hydrology and flood risk as described above shall not commence until the Manager has certified the report</p>
SW.3	<p>The design of waterway crossings shall also meet the following performance criteria:</p>
	<p>a) The design of the Waikanae River Bridge shall provide at least 5m clearance to the beam soffit across all parts of berm where required for operation of maintenance machinery. At least 4.5m minimum clearance shall be provided for the El Rancho access road.</p>
	<p>b) The top surface of berm riprap under the Waikanae River Bridge shall be no higher than the existing berm level, and shall retain existing berm drainage patterns.</p>
	<p>c) Freeboard for Waikanae River Bridge above modelled level for the 1% AEP flood plus climate change to 2115 shall be at least 2.2m</p>
	<p>d) The following allowance shall be made for future services to pass under the Waikanae River Bridge in between the Super Tee beams with oversize sleeves in the abutments and crosshead beams.</p> <ul style="list-style-type: none"> i. 6-Ø100mm duct for telecommunications below northbound outer shoulder. ii. 5-Ø100mm ducts, 4 for telecommunications and 1 for gas below southbound outer shoulder. iii. 2-Ø450mm water/wastewater pipes.
	<p>e) The Waikanae River Bridge configuration shall consist of 5 spans, with twin-column piers, and with all piers being clear of the permanent waterway. The main river channel shall have a clear</p>

	span at berm level of no less than 35m.
	f) For the final design for all culverts, a culvert blockage risk assessment shall be undertaken by the Consent Holder and any blockage risk identified as a result of this assessment shall be appropriately managed, to the satisfaction of the Manager.

The conditions in Table 1 generally provide the designer with flexibility when carrying out the design in order to achieve the outcomes required by the conditions. It is the outputs (i.e. the performance) that are prescribed, not inputs or design details such as specific flow rates, contaminant loads, device sizes etc. For example, SW.1A) requires treatment design in accordance with the Agency's standard but within this document there are many different options available for runoff treatment. Issues have arisen during the detailed design, or implementation, phase that have required clarification and these are discussed in section 3.

3 IMPLEMENTATION OF THE CONDITIONS

The need for flexibility in the design phase gave rise to a set of performance conditions. However, during the detailed design some issues arose that needed the Alliance and Councils to agree on the interpretation of the conditions and also some that needed the consents to be amended. While design flexibility was allowed for (and improved with the amendments), flexibility from a planning compliance perspective was and remains somewhat limited.

The following section discusses and reviews the issues that have arisen during the implementation of the conditions and how they have influenced the design and planning of the Project as it continues through the detailed design and construction phases. To achieve the desired flexibility some changes have been made since the BOI, including the following:

- Developing a dual council design approval procedure in addition to the independent peer review already specified (but with formal certification limited to GWRC);
- An amendment to the consent to clarify the interpretation of the term "staging" to better match the implementation programme;
- An amendment inserting a new clause to conditionally allow greater flooding beyond the designation subject to landowner approval; and,
- Proposing a mechanism for agreeing the interpretation of the "in general accordance" condition in relation to culverts and rip rap.

3.1 DUAL CERTIFICATION

Condition SW.2 d) sets the framework for the stormwater design and modelling to be independently peer reviewed and then certified by the Manager, who in this case is GWRC's Manager of Environmental Regulation. Interestingly, the BOI did not require the Alliance to obtain KCDC's "sign-off", which would have equated to dual certification.

Well before the inception of the Project, GWRC and KCDC agreed a division of responsibility (management and administrative) for the District's watercourses following the dissolution of the old District Manawatu Catchment Board. Minor streams and drains

passed to KCDC, while GWRC accepted responsibility for the Waikanae River and Waimeha Stream.

The Expressway bridges, culverts, diverts, or discharges stormwater to watercourses that are largely part of the wider urban drainage system. Often streams drain into piped networks passing through townships (collecting runoff from municipal drainage along the way) before returning to stream form and ultimately discharging to the coast. These systems are of more interest to KCDC than GWRC yet the final conditions did not include dual Council certification of the design.

The primary responsibility for management of the environmental effects relating to flooding, scour and water quality (as set out by the Regional Plans) sits with the GWRC so this was the appropriate place for the certification responsibility to rest. During the BOI the Alliance did not initially favour the concept of dual certification for its potential to introduce conflicting requirements from the two agencies. If this eventuated, the time delay costs involved to resolve, particularly in a prolonged disagreement, could have resulted in significant additional costs to the project (as a rough metric, delay costs on the Alliance are about \$1.0 million per month, so the risk is significant). Speeding up the consenting process was also at the heart of why, at the request of the Agency, the Minister for the Environment "called in" the Project to a BOI, yet these conditions introduced the potential for ongoing delivery delays similar to those sometimes associated with traditional resource consent processes.

While dual Council certification was not imposed in the conditions, in implementation of the condition, and given KCDC's clear interest in flooding effects in the District, GWRC expressed an understandable reluctance to certify the designs without KCDC's prior approval. Therefore, in practice GWRC has not certified the designs until KCDC's Stormwater Asset Manager has reviewed the design and provided KCDC's acceptance. So while not the intent of the condition, the designs are in fact subject to dual certification. Generally, the certification process has worked well, ran smoothly and certification has been obtained in a timely fashion. This is a reflection of the good relationships and trust built up between the designers, planners and respective Council officers.

In contrast, the Site Specific Ecological Management Plans are subject to a similar certification process that does require dual certification by both Councils. Obtaining certification of these plans has required much more co-ordination time and effort from Alliance Planners. The time taken to obtain certification, and sometimes even obtain re-certification when significant unforeseen changes occur, becomes an important factor when considering design alternatives or changes. If the process takes too long or involves risks of not being able to reach agreement, then it limits decision making and thereby impacts on the overall flexibility of the Project.

In summary, the dual approval (as opposed to a full formal dual certification) process with the final, official certification by GWRC is working well for all parties and provides an approval process with about the right balance between compliance control and design flexibility.

3.2 INTERPRETATION OF STAGING

Condition SW.2 in Table 1, speaks of a staged design and certification process. Originally there were two separate clauses and the wording of the condition was simpler but less flexible from a planning and programme perspective. The clauses had read as follows:

"SW 2d)- The stormwater management design and flood risk modelling shall be independently peer reviewed by a suitably qualified and experienced engineer agreed with GWRC and KCDC (at the cost of the Consent Holder) to ensure that the hydraulic modelling is appropriate and that the stormwater design and flood risk management meets the performance criteria set out in SW.1, SW.2 and SW.3. The results of the peer review shall be provided to the Manager at least 15 working days prior to commencement of Works. The Consent Holder shall implement any recommendations in the peer review or an alternative design detail agreed with the peer reviewer and certified by the Manager."

"SW 2e) - At least 15 working days prior to the Commencement of Work in each Stage, the consent holder shall provide a report to the Manager which confirms how the final design of the Expressway embankments, water crossings and stormwater discharges for each Stage meet the requirements of SW.1, SW.2 and SW.3. Works in the relevant Stage shall not commence until the Manager has certified the report."

This above original condition encountered implementation issues early on as the size and scale of the project required the design and construction to be staged. While the conditions provided for staging of certification subject to design by catchment, these hydrological "stages" did not always align with overall project delivery and construction stages.

Another related issue encountered arose from the term "prior to Commencement of Work" which relates to the overall Project definition of "Work". This is defined in the conditions as "Means any one or more of the various activities undertaken in relation to the Project". That is, "Commencement of Works" was considered to be unnecessarily constrictive in relation to the stormwater conditions and needed to be clarified so that it did not include items that had no bearing or relationship with hydrology or on flood risk management.

In particular, a number of enabling works were required to establish construction sites which have no impact on the hydrology or flood risk. These were generally defined, in agreement with GWRC, to be earthworks below existing ground level including (but not limited to), sub-surface work, demolition of structures, fencing, vegetation removal, utility service diversions, site clearance, haul roads (subject to grading limits etc), subsurface ground improvements for bridges etc.

GWRC concurred and it was agreed that the best way to resolve these implementation issues was to amend the condition to allow more flexibility of interpretation of staging. The original intent of the amendment was to modify one clause and delete another to simplify the conditions, but in the end the amendment agreed with Council resulted in a longer and arguably less clear clause which ideally, would have benefitted from further restructuring if time was not so pressing. In any case, the amendment addressed the inconsistency regarding stages of works and allowed some works to commence on site prior to stormwater certification.

Clarification of the staged delivery has resulted in submission of 15 different design compliance reports for certification. The reports have been based mainly on catchment boundaries but also according to project delivery activities. For example, the construction methodology in two catchments involves significant areas of preload where the existing deep, peaty ground needs to be consolidated prior to construction of the Expressway (as opposed to excavating the peat out and replacing with better material). The preloading

involves forming large earth embankments that invariably cut across flow paths and drains, and fill in floodplain storage. The preload remains in place for many months (as long as 18 months in one particular location) and the flood effects need to be addressed. The tight construction programme has required the preload to be placed well in advance of the full detailed design commencing in this area. The only way to accommodate this was by staged certification: one report for the preload activity and a second, follow up report for the complete detailed design.

Secondly, the Project being divided into construction works 'zones' did not always align with catchment boundaries. This meant that the reports for certification were often split down the middle of a catchment. In these cases certification of one part of the catchment relied on satisfying the peer reviewer (and councils) that performance and compliance can still be achieved when the remaining part was designed i.e. that the performance of one area did not prejudice the performance of the other. In the end this resulted in some geographical overlap of certifications.

The time and effort spent early on with Council has resulted in a relatively smooth and streamlined staged certification process. The condition amendment has provided the required clarity to deliver on the original intent of the condition, i.e. to provide flexible conditions. In this case to allow for a staged delivery, or programme flexibility, but still retain certainty of outcome and effects.

3.3 FLOODING BEYOND THE DESIGNATION

Condition SW.2c) has the greatest overall influence on the design performance. It requires that any flood impact beyond the Expressway designation is limited to no more than a 50mm increase from existing flood levels. While it is common to expect a project to not significantly affect neighbouring flood risk, 50mm is a very challenging performance level and effectively means no worsening of flood levels on any adjacent land. This condition requirement was imposed in response to a number of submissions, including from both KCDC and GWRC, raising concerns about hydrology and flood effects. These concerns were not unexpected in a District with large areas of flood prone land.

This limit, combined with the low lying nature of catchments has resulted in common features throughout the design, namely:

- Flat graded, large diameter culverts (also conducive for fish passage);
- Relatively large span bridges compared to the small size of the normal waterway beneath them (for example the Waikanae River bridge has 180m span and the river channel beneath is only 15-20m wide);
- Large wetland swales running parallel to the Expressway (typically 12m wide top width, 1.2m deep); and,
- Large areas of offset storage in the form of wetlands (approximately 30ha in total).

In some select locations the design could not keep the flood impact below 50mm without significant additional works outside of the designation boundary. In some instances it was considered by the Alliance that these works could result in greater adverse environmental impacts than the effects of the flood increase itself (e.g. extent of land disturbance, clearing significant indigenous vegetation etc).

This issue first arose in a location where the modelling was reporting just a 51mm increase within a small, isolated wetland basin that the Expressway bisected, where the implications of non-compliance were insignificant. This difference is smaller than the relative accuracy of modeling, but the explicit nature of conditions means that it needed to be addressed, that is, the original condition was too inflexible from a planning perspective. The basin had no drainage outlet with floodwater soaking away over time. To set about widening the wetland in order to provide compensatory storage for a 1mm impact was not considered to be the best environmental outcome given that it would have required additional disturbance of the wetland.

The land effected was owned by KCDC who acknowledged that it was inappropriate to try and address this minor "non-compliance" with more earthworks. However, under the conditions, GWRC had no flexibility for this outcome and so could not certify an effect greater than 50mm in any circumstance, no matter how minor and whether they agreed the effect was immaterial.

It was clear that an amendment of the condition was needed to provide GWRC a mechanism to certify designs in some circumstances with a greater than 50mm flood effect. GWRC agreed that this would be acceptable if the affected landowner were consulted and provide written acceptance. The needed compliance flexibility was then provided with a consent amendment that added in a third clause to SW.2c). It reads as follows:

"iii) where c) i) or ii) have not been met, the Manager may (at their discretion) certify the stormwater report required by (d), where the consent holder includes with that report the following:

- The written approval of any landowner(s) who would be subject to a flood level that is greater than 50mm above existing flood levels.*
- A description of the location and the degree of flood level that is greater than 50mm above existing flood levels*
- Reasons and a discussion as to why c) i) or ii) has not been met; and*
- A description of the consultation with affected landowners about flood level effects"*

Subsequent to the amendment this clause was used where the Project would reduce flooding (by approximately 150mm in a 100yr storm) in a residential area but as a consequence increased (by approximately 75mm) the downstream flood levels in a regional park. In an engineering sense, it seemed counter-intuitive to accord rural, pastoral land a higher level of protection than residential areas. This would have likely been the result without this amendment.

In summary, this issue is typical of what can arise in many consent conditions and highlights the importance of well worded conditions with the provision for flexibility, provided it is agreeable to all. The amendment gave GWRC a mechanism for certification of increases greater than 50mm, should they consider it to be acceptable. They still hold the authority of certification and could withhold it if they considered the environmental effect of the additional flooding to be unacceptable. The amendment introduced flexibility and when applied, allowed for a more environmentally appropriate outcome.

3.4 IN GENERAL ACCORDANCE

As is common for all consents, the Project has a general condition referencing the BOI application documents stating that the work shall be undertaken "in general accordance" with these documents. This condition (referred to as "condition 1") is intended to give some scope for changes, which inevitably occur during the detailed design and construction phases of a project, while its secondary role is to provide for future enforcement by the Council if works significantly differ from the consented application i.e. if the changes are not "in general accordance".

The debate on interpretation of the term "in general accordance" arises on almost every major project, and M2PP was no exception. While the stormwater conditions are fundamentally performance based to offer flexibility in design, in practice this is limited by condition 1.

A significant level of detail was required for the application, including plan sets and reports, to enable an assessment of the actual and potential environmental effects to be undertaken. Naturally this detail is written into condition 1, but for a project where the detailed design (or updated modelling and subsequent peer review) had not commenced, it is inevitable that changes would arise.

For M2PP issues of being "in general accordance" have arisen and a specific example from the stormwater design relates to culverts and associated scour protection (i.e. rock rip rap) lengths. The application documents proposed a number of culverts with associated rip rap each with a certain length. In addition, whilst all the bridges were included, detail of the rip rap required under the bridges was not clearly shown on the plan sets.

The consents, however, specified ecological mitigation requirements based on the length of affected stream bed i.e. culverting, diverting and armoring of streams needed to be offset with a mix of rehabilitating existing streams or creating new ones elsewhere. The ecological consents included multipliers effectively used to convert an "affected length" to a minimum length of new stream necessary to provide mitigation. Where detailed design could reduce culvert and riprap lengths, representing a good environmental outcome, it also reduces the amount of mitigation needed. The converse also holds with increases.

In addition, to obtain certification of the project's Ecological Management Plan (required prior to the commencement of all works), GWRC required lengths of culverts and rip rap to be specified, in order to provide them the certainty that mitigation can be achieved. This was before detailed design was carried out.

Culvert and rip rap detailed designs across the Project have so far resulted, on average, in a reduction in the length of affected waterways overall. However, in some instances while the culvert has become shorter the rip rap length has, for various reasons, actually increased. This resulted in the GWRC querying whether the design, whilst overall considered to be better for the environment and meeting the stormwater conditions, was in general accordance with condition 1.

The key principles considered by Council when making an "in general accordance" decision are location, intensity, scale and character. On one hand, clearly any decrease in affected stream length is acceptable, on the other hand when the change involves an increase it then becomes subjective as to the point when the design is no longer in general accordance with the AEE documents.

While the design has been acceptable to GWRC and they have provided stormwater certification, the relative inflexibility of condition 1, has resulted in more work for the design and planning teams in demonstrating compliance with it. The result has been time consuming amendments to the Ecological Management Plan; further certifications; provision of additional detail beyond what would have otherwise been required; and increased consultation with GWRC as catchment designs are completed. It has complicated other submissions to GWRC as well, for example, ahead of commencing any works that affect watercourses an erosion and sediment control plan must be certified and these now require stormwater input before approval is given. To assist in this process, the Alliance now reports a running 'tally' of culvert and rip rap lengths which is provided to GWRC from time to time as the design progresses. GWRC has reserved their decision on whether or not it is in general accordance for the final tally still to come.

In summary, while the design changes justified under the stormwater performance conditions have resulted in some environmental benefits overall, they have created additional process and paperwork and it remains to be seen if the design will be considered to be in general accordance with the original application. Ensuring there is flexibility in the application documents early in the consenting process is important when using performance conditions in order to allow changes to be more readily accommodated during design. Even for the changes are required to address adverse environmental effects or meet conditions of consent, it goes a long way to appease future "in general accordance" debates. Careful thought needs to be given when contemplating performance conditions as the flexibility they can provide can be limited by the "in general accordance" condition.

4 CONCLUSIONS

M2PP's stormwater performance based consent conditions set out to provide the designer with the flexibility needed in an alliance, whilst meeting the environmental requirements and objectives set down resource consent conditions. There have been many challenges and benefits that have arisen during implementation of the conditions, with the key ones being:

- Formal dual certification of the stormwater design by GWRC and KDCD, while not required by the conditions, happens nonetheless, is working well and strikes a good balance in the compliance procedures;
- Consent conditions that provide programme flexibility are as important providing flexibility in design. For major projects like M2PP, conditions can be interpreted differently and so a clear provision for staging in the conditions is crucial;
- Conditions that allow for affected parties to accept what would otherwise be non-compliant impacts provides a very useful mechanism for design and compliance flexibility.
- Debate will arise over "in general accordance" conditions in regard to interpretation. Providing flexibility for changes during detailed design in the original consent application documents, and a mechanism for recording then managing those changes, is as important as just proposing flexible performance based consent conditions.

Generally, the stormwater consent conditions (with subsequent amendments) have provided good flexibility for the design, however, in contrast from a planning compliance perspective the flexibility is limited.

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