

Commentary on the TPL supplementary evidence regarding the ongoing existence, operation and maintenance of the Matahina Hydroelectric Power Scheme.

Due largely to the lack of time available to prepare a full commentary I will focus on the matters set out in the summary and conclusions in the applicants supplementary evidence.

The evidence of Mr Levy in addressing the matters raised by Williams and Crabbe, in my opinion misses the point.

There is a repeated theme referring to the damage to the River Scheme protection works and the river system as a whole, being caused by flood damage.

I would agree that floods are the main cause of the actual damage. Erosion only occurs during periods of higher river flow and high river flows (flood flows) are a natural occurrence from time to time.

However natural flood flows do not occur everyday and when they do occur they follow a reasonably standard pattern. The river will generally rise in level relatively slowly and recede even slower. The very regular, potentially many times a day, flood events that occur as a result of the operation of the Matahina Scheme result in the river level rising and receding very rapidly.

The very regular floods caused by the Matahina Scheme result in bank instability caused by rapid drawdown and have a significant impact on the quality, nature and location of river bank vegetation. These impacts without a doubt increase the river schemes vulnerability to damage caused by the natural flood events.

Mr Levy states that his 10 years of experience on the river enable him to state that the problems in the river are not caused by the operation of the Matahina Scheme peaking. My observations of river systems and floods and the damage that occur during flood events has been based on observations over more than 25 years and on more than 15 large river systems in the Lower North island. My observations over these 25 years on floods and river bank protection works clearly show that the way the Matahina Scheme impacts on the river system will result in significant and regular flood damage occurring in the river.

The Rangitaiki River Scheme does not rely on the accumulation of silt as a means of avoiding stopbank failure but there is no doubt that the deposition and retention of silt on the river banks that would occur naturally in a run of the river system will increase the integrity and effectiveness of the stopbanks. With vigorous willow growth and grass down to the low flow water level, silt deposits are retained on the river banks and provide a valuable seal that assists in preventing piping and heave failures.

The seemingly endless flow simulations undertaken by TPL appear to show that the effects of one operating regime are not too different than another. Again they miss the point which is that the changes arising from the various operating regimes is significantly different to the natural run of the river regime and these differences are what causes the problems in the river and increases the cost of managing the river scheme.

Time has not permitted me to restudy the calculations used to assess the level of contribution TPL would pay to the Scheme. It is likely that even the upper limit will be inadequate in the

long term but one important matter not addressed is the need to regularly reassess the level of contribution following each large flood event.

Nothing in the new evidence alters my opinion that the Matahina Scheme is impacting on the Rangitaiki River Scheme and no operating regime other than a run of the river scheme will result in the adverse effects being no more than minor.

The evidence by Mr Toan again appears to miss the critical issue which is the effect of the Scheme on the river bank vegetation which if not adversely affected by the Matahina Scheme would hold the silt deposits on the river bank and provide the protection against seepage a piping etc.

Mr Toans figures imply that new vegetation is established in quiescent periods. The natural state of a river will generally allow vegetation to establish and stay established even during large floods and his implication that the silt will be lost by slumping will only be true as a result of the Matahina Scheme and not as a result of natural processes. Natural processes would result in grass and other vegetation becoming established, silt depositing, more vegetation, more silt and so on until the banks are well sealed.

Large floods will damage this natural protection from time to time but no where near to the extent that occurs as a result of the Matahina Scheme.

Mr Tates evidence states that there is no strong evidence that the Rangitaiki River system is vastly different from some other major river systems.

I would have to disagree strongly with this statement. In the inspection of the river I undertook at the time of the initial hearing, I could not believe what I was seeing. I have never seen in my 25+ years involved with a large range of rivers, a river with so much damage and with its river edge willow vegetation in such poor condition.

Please provide the reasoning for your conclusions in the last sentence of paragraph 2 and the first sentence of paragraph 3 of your supplementary comments. The sentences being

'I believe that there is no doubt that the dam operation is impacting on the cost of managing the scheme and the level of flood damage sustained by the river.' and "that flood damage sustained in a flood, aggravated by adverse preconditions could easily get worse prior to it being repaired because of the ongoing fluctuations that occur as a result of the dam's operation".

The dams operation has an adverse effect on the ability of the Scheme to establish robust and vigorous river bank vegetation and causes slumping due to regular and rapid drawdown. These adverse effects require different more expensive erosion control works to be used in the scheme and cause more regular damage than would naturally occur.

It is clear that adverse preconditions result in more, and more extensive, flood damage. In a normal run of the river system, it is more likely that there will be a quiescent period prior to the next flood allowing the damage repair work to be undertaken. The ongoing fluctuations that in-effect result in many small floods, do not create an environment that allows the

damage repair work to be undertaken before the next natural flood and also the next high flow that occurs as a result of the operation of the Matahina Scheme.

I remember a particular wet period in the Mangatainoka River catchment where a whole series of flood events prevented the repair of the flood damage that occurred in the first flood being prepared. The final repair costs were much higher than would have been expected had the first flood occurred on its own and more than the combined cost of the damage repair had all the floods occurred a separate times

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13 October 2011