

## **Reasons for making submissions, to be presented at the hearing.**

I represent three farmers whose properties are bounded by or traversed by the Waianiwaniwa River, and have stock or other property in the river bed area. We support the proposed Scheme and while we are prepared for changes in our environment as a result of the Scheme, we would wish to mitigate some of the less desirable aspects that affect our properties. We wish also to improve conditions in our local river in a way that would be impossible without the development by Central Plains Water. In general the changes proposed should not add significant costs to the scheme or influence its viability.

### Firstly

At present it is possible to predict flood flows in our local river, the Waianiwaniwa, and adjust farming operations but after CPW developments, flows which may resemble substantial present-day floods may be generated by the actions of the applicant at times not predictable by those in the path of the discharges. The Waianiwaniwa river in our area has a substantial fall and confined channel; a flow of 10 cubic metres per second in it would constitute a dangerously fast river which could be a major hazard.

Therefore, we wish the consent authority to impose conditions on such consents that have this potential, which will require the operators of the Scheme to warn those in the path of significant discharges in time to move stock or other assets to safety.

### Secondly

The Applicants' proposed conditions do not indicate how the mean annual flow of the Waianiwaniwa River will be distributed over the year. We feel also that the permanent nature of the Waianiwaniwa River once it emerges onto the Canterbury Plains is not fully taken into account. We would contest the statement in the applicant's Assessment of Environmental Effects Section 3, 3.12.4 that the Waianiwaniwa River downstream of the proposed dam flows only during flood events, and the evidence of lack of fish population once the river enters the cobble/boundary bed of the plains (section 8 page 8 - 10). Recent photographs show a defined gravel channel, with stable banks and we maintain that even

these days it carries a steady flow of clear water for several months of the year either through or bounding our properties. Even the present flow regime of the river, that is, a steady rate which may exist for three or four months every year, is of value to us because

- (1) it supplies stockwater and recharges the local groundwater supply,
- (2) it is visually attractive,
- (3) it supports birdlife and, in some years, fish.

Before land development and swamp drainage which took place in the Waianiwaniwa valley above the proposed dam site, the retention in the wetlands provided a smoothing effect on flood peaks which resulted in the river flowing reliably for most of the year, with aquatic life including a resident fish population of brown trout and mudfish.

It is our hope that the creation of a reservoir of 280 million cubic metres in the area of the former wetlands will give us the opportunity to return to the desirable situation of a steady flow throughout the year, with more controlled flood flows, that used to pertain.

We note that the applicant is aware of the possibility of augmenting the flow in the Waianiwaniwa River (Section 3, 3.12.4) above its mean annual flow. The effect of this could be not only to achieve a steady flow in the river, but also to assist in recharge of the ground water resource in this area of the Central Plains.

Accordingly we will propose changes and conditions to be imposed on discharges from the reservoir and headrace to the Waianiwaniwa River.

Thirdly:

We note that there seems to be no formal spillway in the dam design, as no consents have been sought for discharge of water from the dam other than through the normal outlet structure. When the reservoir is very full the resistance to overtopping and subsequent structural failure is provided by the maintenance of sufficient freeboard and as an extreme, limited overtopping (refer Sec 3.3 of Dam Safety Assurance Report). To a layman it would seem most undesirable to allow overtopping to occur which could result in the gravel downstream shoulder of the dam becoming saturated when all the internal drainage details of the dam are designed to prevent this happening, particularly when the lake is full. Future settlement of the dam could also concentrate overtopping flows, preventing the desired sheet

flow being possible.

Structural failure of the dam would result in a high price being paid by those of us in the flood path.

We will propose that a simple uncontrolled overflow channel be provided in one of the abutments to prevent overtopping in any unforeseen circumstance.