

**Review of Central Plains
Irrigation Scheme Social
Impact Assessment**

Supplementary Report

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1 Reviewer's qualifications and experience

- 1.1 My name is Dianne Buchan. I have been engaged by Selwyn District Council to assist the Council in its task of assessing the social effects of the proposed irrigation scheme, referred to as Central Plains Water Enhancement Scheme. Notice of requirements and resource consent applications for the project have been lodged with Selwyn District Council and Environment Canterbury by Central Plains Water Limited (CPWL) and Central Plains Water Trust respectively.
- 1.2 I am the Managing Director of Corydon Consultants Ltd, an independent consultancy which specialises in social impact assessment, social research and community consultation. Our work is particularly focused on issues related to the environment and to the district and regional plan provisions of the Resource Management Act.
- 1.3 I have a Masters Degree in Public Policy and a Bachelors Degree in Sociology and in 1986 I was awarded the Senior Prize in Sociology at Auckland University. I have been a full member of the New Zealand Planning Institute since 1989 and am also a member of the Environmental Institute of Australia and New Zealand (EIANZ) and the International Association for Impact Assessment (IAIA). I was a member of the New Zealand Association for Impact Assessment since its beginnings as the Social Impact Working Group in 1984 until 2007.
- 1.4 I have been involved in land-use planning matters since 1975 when I was the Town Clerk for the Hikurangi Town Council in Northland (Tai Tokerau). In 1977 I became a councillor on that authority and was appointed Chair of the Planning Committee during the Council's review of its district scheme.
- 1.5 Between 1979 and 1984 I was employed in the Town and Country Planning Division of the Ministry of Works in Whangarei and in 1986, transferred to Head Office in Wellington where I became head of the Social Policy Unit in that division. In 1987 I transferred to the Social Impact Unit of the State Services Commission to assist with managing the impacts from the state sector restructuring programme.
- 1.6 I have been a consultant in social impact assessment and community consultation since 1989, working for territorial local authorities, government departments and private sector developers in New Zealand, as well as carrying out assignments in countries throughout the Pacific. During that time I have undertaken numerous social impact assessments and community surveys, and conducted training courses throughout New Zealand in social impact assessment and consultation.
- 1.7 As an employee in the Planning Department of the Ministry of Works and in the Social Impact Unit of the State Services Commission I was involved in the impact assessment and management processes for the Marsden Point Oil Refinery Expansion project (1984-85) and the Clyde Dam Project (1987-89). As a consultant I was engaged by ECNZ between 1994-95 as a community consultant for the proposed Tuapeka Dam, working with the communities in the Clutha Valley to identify potential impacts and appropriate mitigation measures. In 2004, I was commissioned by Waitaki District Council, Waimate

District Council, Environment Canterbury and Otago Regional Council to undertake a s42a review of the social impact assessment for Project Aqua.

- 1.8 I have delivered papers on social impact assessment and consultation methodology to a number of national and international forums including the New Zealand Planning Institute, the Pacific Islands Forum, the International Association of Impact Assessment and Ramsar (the International Wetlands Convention) Conference. I have also undertaken social impact assessments for a wide range of developments, five of which have required the presentation of evidence to the Environment Court.
- 1.9 Between 2001 and 2007 I was Chair of the Wellington Civic Trust, an organisation set up in 1981 to encourage developments which enhance the quality of life in the capital city. I am currently the Deputy Chair of that organisation and Chair of the Awards committee. In 2001 I was appointed to the Waterfront Leadership Group in Wellington. This was a group established by the mayor and charged with developing a framework for the future development of Wellington's waterfront after the City Council withdrew its proposed scheme change for the area. This Framework has subsequently been adopted by the Wellington City Council and its commercial company running the Waterfront, Wellington Waterfront Ltd. Prior to the Leadership Group I served as Chair of the Community Consultative Committee for the Waterfront.
- 1.10 Over the past 20 years I have gained a wide knowledge of and practical experience in the fields of social impact assessment, community consultation and community development.

2. Review Process

- 2.1 A social impact assessment is a process in which a project is analysed for its possible effects (both positive and negative) on individuals, groups and communities. The Resource Management Act (RMA) requires an assessment of actual or potential effects in such detail as corresponds with the scale and significance of the actual and potential environmental effects, including measures by which these effects may be avoided, remedied or mitigated. The definition of "environment" in the RMA includes "people and communities".
- 2.2 The provisions of the RMA to which my Supplementary Report relates are:
Section 104 (1) (a) "Subject to Part II, when considering an application for a resource consent and any submissions received, the consent authority shall have regard to – Any actual and potential effects on the environment of allowing the activity"
 - a) Section 5 which states that the purpose of the Act is (and here I paraphrase) "to promote the sustainable management of natural and physical resources in a way ...which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety" while "avoiding, remedying or mitigating any adverse effects of activities on the environment";
 - b) Section 7(c) which requires that all persons exercising functions and powers under the Act....shall have particular regard to, among other things, "the maintenance and enhancement of amenity values".

- c) Section 2 which defines “environment” as including “amenity values” which are in turn defined as “those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.”

- 2.3 In order to assess the social impacts of the proposed irrigation scheme and the adequacy of the social impact assessment submitted by the applicant I undertook the following tasks:
- Reviewed the social impact assessment content in the applicant’s notice of requirement. “Adequacy” was determined in terms of the extent to which it provided the information necessary for the consent authority to understand the nature and severity of the social effects which the proposal could have on the environment, as well as ways in which any adverse effects could be mitigated. My review contributed to Selwyn District Council’s Section 92 request for further information.
 - In May last year Kirsty Austin (a senior researcher with Corydon Consultants) and I met with the applicant’s social impact assessors from Taylor Baines Associates and Fitzgerald Applied Sociology to discuss the shortcomings of the original social impact assessment and agreed on a list of information gaps that would need to be filled for the assessment to be adequate
 - At that same time Kirsty Austin and I undertook a site visit of the affected area accompanied by Nick Boyes, Consultant Planner to Selwyn District Council.
 - We undertook an analysis of the submissions received on the original Notice of Requirement and Resource Consent documentation relevant to Selwyn District Council (form 13 and 21 submissions). Submissions to Environment Canterbury were not analysed. I considered that the first round of submissions to the Selwyn District Council would be the most comprehensive in terms of social impacts. Issues that no longer applied given the replacement of the 18 kilometre open canal and tunnel from the Waimakariri river with a 10km tunnel, were readily identifiable. These submissions were analysed to identify the full range of issues raised, the strength of each concern (in terms of numbers of people raising each issue), and which aspects of the project were favoured by submitters and the numbers supporting each point.
 - I reviewed the revised social impact assessment prepared by Taylor Baines Associates and prepared a section 42A report for Selwyn District Council.
 - I reviewed the evidence that has been presented by Dr Nick Taylor, Richard Budd (the applicant’s consultation facilitator), Stephen Chiles, and Clifford Tipler for this hearing as well as submissions from affected land-owners, the Coalgate Residents Association and the Malvern Hills Protection Society. I also reviewed the Dam Safety Assurance Report prepared by URS for the applicant and the Health Impact Assessment report prepared by Mr Humphrey and his team on behalf of the Christchurch DHB.
 - I have also undertaken a second site visit to the affected area to check on specific aspects raised in submissions.

- 2.4 To avoid duplicating submissions made by others and to focus on the particular social impacts that I think are of primary importance in this case, I will confine my comments to the following matters:
- Impacts on directly affected parties
 - Social and psychological effects of the threat of dam or canal collapse
 - Housing of the workforce
 - Impacts of the demographic change as a result of land-use change
 - The reliance on Management Plans to be produced after the hearing to mitigate adverse social effects.

In commenting on each of these aspects I will address the adequacy of the applicant's proposed mitigation measures.

3. Impacts on directly affected parties

- 3.1 In my view, it is almost inevitable that major development projects will create adverse effects on local residents. In this particular case, these effects have been exacerbated by the applicant having the status of a Requiring Authority (see Taylor para 21 f and g). I also think that to some extent the quality of the consultation process and difficulty that affected parties have had in obtaining adequate information have added to these impacts.
- 3.2 In my earlier report I noted that the most commonly raised issue in the submissions was the use of a compulsory purchase process for a project that will result in the benefits of a public resource (water) being allocated to private rather than public benefit and the fact that no benefits will accrue to those who are directly and most adversely affected by the proposal.
- 3.3 I noted that the applicant's SIA set out the social inequity issues inherent in this proposal in a clear, forthright manner. Subsequently, Mr Taylor's social impact evidence graphically documents the social and psychological impacts this proposed development has had on the local community to date (para 9-22). In his evidence he also sets out the family and community impacts likely to arise from the loss of homes and property, both for those directly affected and those who will remain in the Valley (para 31 – 33 and 89). The submissions of local residents, landowners and the Coalgate Township committee (para 36) support his analysis. My own analysis and experience leads me also to concur with that analysis.
- 3.4 In my earlier report I noted that the applicant had not provided any detail about the compensation that would be provided for land and homes required for the project or how land remaining around the reservoir may be reconfigured. In his evidence Mr Taylor notes that there have not yet been any detailed discussions on compensation between CPW and the landowners (para 38). To some extent this has now been addressed with the applicant providing, at the request of the Commissioners, a statement undertaking to purchase land at market value plus 25%.
- 3.5 I noted in my earlier report that the visual and psychological impact of the dam face at Coalgate was likely to have a long-term effect on land values in this settlement. Reduced land values will have an adverse effect on the owners of these properties by reducing their long term financial security and their ability to relocate. Reduced values will particularly affect the retired and the elderly, especially if they have no other source of income than

superannuation. Mr Taylor briefly acknowledged in his evidence the potential for a reduction in property values in Coalgate during the construction phase as a result of noise, dust and vibration (para 41) and during the early operational phase when he acknowledged that Coalgate was likely to experience a reduction of amenity values. He then quotes Mr Glasson's evidence which claimed that the various landscape enhancement measures proposed will soften the various structures over time thus reducing their long-term social effect over time.

- 3.6 In my earlier report I expressed some difficulty in imagining how the dam, as viewed from Coalgate, would soften in appearance over time. I also stated that I thought it would be difficult to adequately mitigate the impact of the dam and canals on the landscape given the high level of appreciation the residents of the Central Plains have for their current environment. I have not changed my mind on that point.

Mitigation

- 3.6 Mr Taylor has acknowledged the full range of adverse effects which the affected landowners and the community of Coalgate will experience as a result of the irrigation scheme. He recommends several measures to mitigate these effects including:
- opportunities for the community to contribute to the design of landscape mitigation and enhancement plans
 - a fair and open process for property purchase
 - the involvement of the local communities in the development of the various impact management plans and other mitigation measures
 - a social monitoring programme to provide the necessary feedback on the performance of the various management plans proposed
 - a Community Liaison Committee to create a forum for discussing and dealing with social issues arising from the construction and operation.
 - information sheets, newsletters and briefings to local residents about changes in the design of the Scheme, potential impacts and the company's proposals to avoid, mitigate or manage these impacts
- 3.7 In my earlier report I strongly endorsed these recommendations but after reading the submissions of the landowners and the Malvern Hills Protection society (para 77-80) I realise these measures will do little to alleviate the serious effects that the proposed scheme will have on the affected parties. While I agree that these measures will provide a marked improvement to the applicant's community consultation process to date, as well as giving affected parties some sense of control over their situation, I am far from convinced that these measures will address the adverse social effects of this proposal to a level where they can be considered to be minor or less than minor. They may go some way to mollify some of the parties most affected but they will not be sufficient to address the scale and range of concerns raised by submitters.
- 3.8 The company's clarification of the purchase price that will be offered to landowners in Waianiwaniwa Valley may help some to come to terms with the project and make decisions about their future but it is clear from landowners' submissions that for many, money is not the solution. It is the loss of family and social history, community coherence and treasured

landscapes that are the major causes of concern and it is difficult to see how these impacts can be mitigated.

- 3.9 As noted in my earlier report, given that the acquisition of land and relocation will in many cases not be voluntary it will be important that the mitigation process goes further than a payment above market price. It should include assistance in finding a suitable alternative location and support through the settling in period.
- 3.11 The reconfiguration of the remaining parcels of land is likely to cause another layer of stress and the potential for conflict between neighbours. To minimise this, an independent, skilled arbitrator should be employed to carry out this process.
- 3.12 In my view the recreational use of the reservoir cannot be regarded as compensation for all of those detrimentally affected given that it will, as Taylor notes, introduce new and unwanted noise into the tranquil rural environment (para 68) and will result in the loss or reduction of recreational opportunities for existing recreational users (para 123).
- 3.13 In response to a request from the Commissioners for the applicant to outline the company's proposals to compensate the Coalgate Community and affected landowners for the social and amenity impacts of the scheme, the applicant has proposed a condition that the consent holder shall provide a sum of \$100,000 at 12 month intervals over three years and an annual sum of \$20,000 per year, inflation adjusted, for the term of the resource consents. These allocations are to fund projects and initiatives which meet the social, economic and cultural needs of landowners and communities affected by the headrace and the dam construction works.
- 3.14 It is for the affected parties to decide if these funding allocations will be sufficient compensation to meet their social, economic and cultural needs. Given the scale of the impacts, I do not believe these funds would go very far in mitigating the adverse effects.
- 3.15 I note that the projects for which funding will be provided are to be approved by CRWT in consultation with the community. I consider this is inappropriate. It is for the community to decide what is in the community's interest. I consider it is more appropriate that the funds be put into some form of Trust which is administered by an independent body that represents the affected parties and to which community groups and individual landowners can apply.

4. Social and psychological impacts of the risk of dam or canal collapse

- 4.1 In his evidence, Mr Taylor notes that there is a considerable amount of anxiety among Coalgate's and other local residents about the dangers posed by a breach or overtopping of the proposed Waianiwaniwa dam and that others in the district have concerns about the consequences of a breach in the headrace (para 69).
- 4.2 In my earlier report I noted that about a quarter of the submitters to the Selwyn District Council expressed concern about the risk (physical and psychological) of living under a dam and / or the likelihood of it failing.

Frequent reference was made to the existence of earthquake fault lines nearby.

- 4.3 In 1997, the NATO Science for Stability Program funded a study on managing dam risk. The study found that risk perception involves people's beliefs, attitudes and feelings, as well as the wider social or cultural values and dispositions people adopt toward dam hazards and benefits. Engineers are trained to work with objective safety evaluation criteria based on a quantitative analysis, and more educated town dwellers tend not to worry about the dam because they trust the expertise behind its design. However typically, local residents don't easily accept a new uncertain risk that is imposed on them by others unless they perceive a direct benefit as a result. Examples of this would be farmers who are provided with access to irrigation as a result of the dam or those who benefit from recreational opportunities provided by the dam.
- 4.4 Residents living below a large dam can experience ongoing anxiety and fear and tend to have a greater awareness of the consequences of a break or accident than people living further away. The NATO study found that the judgments of local residents about dam safety are based on confidence in dam engineering and the particular characteristics of the dam, with older dams for example being considered more trustworthy than newer ones, because they have been "proven" safe. From this it can be assumed that anxiety levels will be highest among residents in Coalgate and most prevalent in the first years following the completion of a dam but feelings of anxiety may reduce over time.
- 4.5 The study concluded that people's fears need to be taken seriously because no dam can be guaranteed safe in all situations. The study emphasised the importance of having dam monitoring systems, emergency planning (including a risk communication strategy) and effective warning and response systems. The conclusions emphasised that these systems need to be developed in consultation with the affected communities and include public education and training that is "sensitive to the characteristics and feelings of the population at risk along the valley".
- 4.6 Guidance from the Ministry for the Environment reiterates the need to consider the effect that the construction and operation of dams may have on community health (*Guidelines for Resource Consents for Dams and Associated Activities, Nov 2000*). The guidance identifies the range of risks that can arise from dams including the effect of floods or dam collapse on communities and the fear of these events. The guidance states that "*the fear of the imagined or unknown is usually greater than that of the realised project*".
- 4.7 The Ministry recommends mitigation measures to reduce people's fear and anxiety such as taking people to similar completed dams. It also recommends actions that will build on people's trust in the structure and operating procedures, such as the development and implementation of an emergency action plan, regular monitoring and evaluation of dam safety data, and regular visual investigations of the dam and associated structures. The guidelines recommend that these be enforced through conditions of consent and should refer to accepted industry guidelines (such as the NZSOLD Dam Safety Guidelines, Nov 2000).

- 4.8 The inundation maps provided by the applicant show the extent of inundation in for various scenarios of a failure in the structure of the dam. The estimated loss of life in the worse case scenario (arising from an earthquake where there would be no warning time) is 200.
- 4.9 Taylor notes that psychological studies show that some people will continue to experience fear and uncertainty about the dam due to the perceived scale of the consequences of a catastrophic unforeseen event. In my view, this “dread risk” is likely to be particularly evident in Coalgate where, unlike other communities located below, and in close proximity to a dam (Clyde, Millers Flat and Kurow being good examples), the 55 metre dam face will be highly visible, looming above the Coalgate Township as a constant reminder to local residents of the risk it represents. The submission from the Coalgate Township Committee notes that *“with embankments and dam surrounding three sides of the township, even a minor breach of the dam or the canal embankment could cause serious flooding in Coalgate.”*
- 4.10 As a social impact assessor I have undertaken a considerable body of work on the impacts of flooding.¹ The social effects of a major flood in areas of residential settlement are wide-ranging and long lasting. Where there is loss of life, the event is particularly traumatic, not just for the immediate family but also for all those who have some association with the deceased. Other severe social impacts result from loss or damage to homes, other personal property (including memorabilia), places of employment, facilities that are part of the fabric of community life, loss of productive and domestic (or companion) animals and loss of essential services such as water supplies, sewage treatment systems and roading networks. Disruption of road networks can isolate flood victims and inhibit rescue procedures and, in the aftermath, can hinder recovery work and the social and economic functioning of the community. The stress resulting from the disruption and losses caused by flooding can lead to the malfunctioning of social groups (particularly families), and to short and long-term physical and mental health problems for individuals. Shock, exhaustion, anxiety, grieving and the inability to control one’s situation are all contributing factors to the stress, which individuals, groups and communities experience in the event of a major flood.

Mitigation

- 4.11 As mitigation for the risk of dam collapse Mr Taylor recommends the development of a Health and Safety Plan which would include procedures for identifying, monitoring and managing threats to public safety and providing emergency warnings for emergency and maintenance water discharges. He further recommends that these be developed in consultation with local communities and recreation groups and give due consideration to matters of insurance and community recovery from emergencies and incidents. This provision, as well as a requirement for an Emergency Action Plan (EAP), are included in Mr Tipler’s evidence as suggested conditions of consent. These conditions, provided they are able to be met by the company, would comply with the recommendations from the NATO research and also the Ministry for Environment guidelines.

¹ Assessment of the impacts of Cyclone Bola (1989), Hutt River Floodplain Management studies (1991 1992), Waikanae and Otaki Flood Plain Management Reports (1992).

- 4.12 I endorse the conditions set out in Mr Tipler's evidence on the proviso that the Health and Safety Plan is as comprehensive as Mr Taylor recommends, that the company has the necessary resources and skills needed to comply fully with the requirements of the EAP, and that the District Council has the necessary skills and resources to monitor compliance with these two conditions. The two plans will need to take into consideration the higher number of older residents in Coalgate and Glentunnel. These people, as well as the very young, are less likely to be able to respond quickly to emergency situations.
- 4.13 As with the measures proposed to mitigate the impacts of land acquisition and construction, I agree that a Health and Safety Plan and an Emergency Management Plan will provide affected parties with some sense of control over their situation, but I am not convinced that this will be sufficient to address the adverse social and psychological effects of the risk of a malfunction in the dam or canal to a level where these effects can be considered to be minor or less than minor.

5 Housing of the workforce

- 5.1 The CPWL proposal does not include provision for housing the construction workforce in the affected area and the SIA supports that position (Section 4.1.1) indicating that accommodation in the project area won't be needed, as Christchurch and two other neighbouring districts are within the labour market area for the site. It goes further by specifically recommending (4.1.2) that specialist workers from outside the area should be housed in the Christchurch urban area.
- 5.2 In his evidence Mr Taylor notes "*studies of large scale development projects indicate that a significant number of the social impacts on host communities are caused by the arrival of a large group of project workers who take up residence in the area for the period of the construction*" (para 54). I do not agree with this statement. I think the impacts which Mr Taylor refers to result from a *lack of planning for the population increase* rather than the increase itself. In my view, accommodating workers in the affected area, within the limits that the local community is able to sustain, can provide direct benefits to that community and thereby help compensate for the adverse effects the residents will inevitably experience throughout the construction phase.
- 5.3 The SIA estimates a potential 2,000 vehicle movements per week on the public road network if workers drive their own cars to the site and suggests that to reduce the number of vehicles, workers in the Christchurch labour market area should be bused to the sites.
- 5.4 In my earlier report I noted that in my view this was a matter which requires more consideration. Measures to decrease the number of people needing to travel to the construction site by private vehicle should be encouraged but I believe that busing will be largely ineffective in addressing this issue. Busing shift workers who are dispersed across Christchurch and in surrounding towns could prove logistically impractical.
- 5.5 The potential benefits of locating the workforce on-site are not identified in the SIA nor does Mr Taylor give consideration to this option in his evidence. In my view these potential benefits should be taken into account in deciding the best approach. Providing accommodation for at least some of the

workforce close to the construction site is likely to generate benefits for a wider range of people in the communities affected by the project by:

- increasing demand for goods and services from local providers
- opening up opportunities to local residents for wider social networks and increased support for social activities
- increasing demand for properties available for rent and
- if the developer builds relocateable accommodation units, these could be made available at the end of the construction period to community organisations, social services, tourist operators etc by way of compensation.

- 5.6 Avoiding the need for construction workers to travel long distances on a daily basis to the site will also contribute to (rather than undermine) the national objective of reducing greenhouse gases.
- 5.7 The submission from the Coalgate Township committee states (para 19) that *“with the intention to bus construction workers out from Christchurch, it would follow that the benefits to the local economy during the construction phase would be minimal.”* From this statement I assume the community would be open to discussing ways by which a portion of the estimated 200 workers could be accommodated in the local area.

Mitigation

- 5.8 Consideration should be given, in consultation with the Coalgate and Glentunnel communities, to accommodating a portion of the construction workforce in these communities. This will reduce the number of vehicles travelling from Christchurch to the construction site on a daily basis and will potentially generate benefits for local retailers, service providers and social organisations as a way of compensation for the inevitable adverse effects of the construction period.

6. Impacts of the demographic changes resulting from the anticipated land-use changes

- 6.1 Seventy-six submissions to the Selwyn District Council expressed concern at the changes to the existing community structures and lifestyle expected to result from land acquisitions and changes in land-use. Some referred to the loss of traditional farming families who would be directly displaced by losing land or would choose to leave as new farming production systems develop in response to the availability of irrigation. These concerns were expressed in terms of a loss of community identity, history, coherence and commitment as a result of existing farming families being replaced by a more transient dairying population and absentee (corporate) landowners.
- 6.2 In my earlier report I noted significant gaps in the analysis of the existing community and the changes to the social fabric of the community likely to result from an increase in dairying. In his evidence Mr Taylor has comprehensively addressed these matters. His analysis is based on his extensive knowledge in this field of sociological study and well as his research on current trends in the affected area. I concur with his analysis and his conclusions and endorse his recommendations (para 162). These recommendations are set out more comprehensively in his SIA report.

Mitigation

- 6.3 To increase the capability of affected communities to respond to the anticipated changes in local social structures, the SIA recommends that a system of monitoring, information dissemination, consultation and support be established. This is to include monitoring of the changes taking place in the local farming sector; identifying business and employment opportunities; ensuring that local services have the information they need to plan for changes in demand; and helping new workers and families integrate into the community.
- 6.4 Given the uncertainty of the population changes resulting from the project, I consider this to be a sensible response. To ensure the process is able to deliver timely advice, there will need to be a comprehensive approach to the population predictions that includes information from council officers responsible for processing subdivision and dairy conversion applications.

7. Mitigating adverse effects through future Management Plans

- 7.1 The Malvern Hills Protection Society in its evidence has noted the applicant's heavy reliance on the use of Management Plans to mitigate the adverse effects of the proposed development. The submitter notes that the detail of these Management Plans would be submitted in the future, after any Designation is in place. I agree with the Society and the other landowners who have submitted on this point, that such a process is unsatisfactory. It provides no assurance to the affected landowners and communities, or to the Commissioners, about the extent to which the Plans will mitigate the adverse effects.
- 7.2 I agree with the submitters that these Plans should be presented in detail to the hearing so that the Commissioners and affected parties can scrutinise them in light of the impacts. If they are found to be acceptable they should then be included as part of the conditions of consent to be enforced by the relevant council.
- 7.3 Should the measures set out in these Management Plans be found through the monitoring process to be inadequate, provision should be made for them to be amended to meet the performance standards established in the consent.

8. Conclusion

- 8.1 The mitigation measures proposed by the applicant should help to reduce the negative social effects of the proposed irrigation scheme and in some cases help to spread the benefits of the scheme outside of the group of shareholding landowners.
- 8.2 Mr Taylor, for the applicant, concludes (para 169) that in his view, the social and economic benefits of the scheme and its construction will be offset by the short and long-term negative impacts on particular groups. He then lists these effects. He goes on to state (para. 171) that the likelihood and intensity of the effects of the Scheme's construction and operation on people and communities, and the overall level of enhanced social well being

achieved, given the Scheme's benefits and costs, will depend on CPW developing and implementing appropriate management plans, monitoring and mitigation and codes of practice – with community consultation and input from relevant agencies.

- 8.3 I concur with this conclusion but in my view, the extent of mitigation is so dependent on the contents of the various Management Plans and the quality of the monitoring processes that they should not be left to chance; they should be part of the evidence presented to the Commissioners.
- 8.4 In my view however, the adverse social effects of this development cannot be mitigated to a level that complies with Part 2 and particularly Section 5 of the Resource Management Act. The range of impact management and monitoring procedures proposed by the applicant together with the additional measures suggested by Mr Taylor (listed above at para 3.6) will provide only partial mitigation, they will not avoid or remedy the effects. The adverse social effects of this project will be of such a scale that in my view they cannot be mitigated to any significant degree.