

**APPENDIX 9
REPORT OF MEETING ON
PIPES**

APPENDIX 9 -- REPORT OF MEETING ON PIPES/OPEN CHANNEL PROJECT

This document is a general report of the meeting called to discuss the unedited draft report of SFF Project 05-117 held at MAF policy offices in Christchurch in June 2007. The attendees at the meeting are given in Annex 1 to this appendix. The comments and suggestions recorded here are not attributable to any attendee – rather they came forward in general discussion.

The main suggestions for additions and clarifications from the meeting have been incorporated in the final report.

1.0 Agenda

The agenda for the meeting and a hard copy of the unedited draft report were issued to all attendees several weeks before the meeting. Given this, the presentations given were focused on the generic findings, and details of case studies used to inform the generic aspects were discussed in detail in the open forum.

The purpose of the meeting was to:

- (a) present the methodology used and results of the study;
- (b) to get feed back on details and have a discussion with a view to finalizing the report; and
- (c) to discuss the dissemination of the work to a wider audience.

The introductory presentation involved members of the study team:

Dr Terry Heiler, Heiler and Associates Ltd	Project Manager
Dr Nick Brown, Economist	Economic Methodology
Rose Edkins, Aqualinc Research Ltd	Piped Distribution
Craig Scott, Riley Consultants Ltd	Open Channel Distribution
Sue Cumberworth, The AgriBusiness Group	Social, Cultural, Environmental

Open Forum Chair (Terry Heiler) – Discussion, Questions and Answers

2.0 Suggested Additions to Report

Seepage Losses from Open Channels

Issue: The seepage losses in open channel systems may create benefits that have not been identified strongly enough – for example, recharge of groundwater, additional dilution of leachates and habitat creation. The financial benefits of saved water depend on quantum and this is difficult to make reliable ex ante estimates. Comment should be added to report.

Response: This will be done.

Economic Analysis

Issue: Scheme feasibility depends on technical, environmental, financial, economic and bankability issues and decisions should be based on as assessment of all these aspects – not just lowest long run costs. These aspects will be scheme specific, not generic. Comment should be added to report.

Response: This will be done.

Sensitivity Analysis of Economic Cost Estimates

Issue: Further analysis of the critical assumptions in determining economic cost needs to be done.

Response: The economic analysis will be extended to incorporate the sensitivity to key assumptions.

Cost of Land Purchase

Issue: It is not clear that the cost of land purchase has been incorporated in economic cost analysis.

Response: Has been included but will make that clearer in report.

Future Expansion

Issue: Costs will be less for open channels if there is later expansion of the scheme area.

Response: Agreed and a comment will be added to this effect.

Opportunities for Reducing Piped Costs

Issue: Adopting a lower level of design standard – as for ALIS case study -- will reduce costs and increase risks.

Response: A comment will be added to report to this effect, noting the difference between the ALIS case study and particular designs being currently investigated for the ALIS

3.0 Comments on Case Studies

Design Flows

Issue: Have pipe sizes and open channel capacity been based on the assumption that design flows will be 80% of peak demand or 100%?

Response: The case studies have assumed 100% of peak demand, but final designs may adopt a lesser percentage – this would reduce pipe costs more than open channel costs.

Incorporation of Depreciation in Economic Cost Analysis

Issue: The question of incorporating a sinking fund allowance for replacement in the economic cost analysis was raised.

Response: Extensive enquiries of water supply and irrigation entities, and advice from the economic analyst suggested that the most realistic way to accommodate this issue was to allow for sufficient annual costs to maintain function and integrity of the systems for the length of the economic analysis period.

Cost of Additional Electrical Transmission Facilities

Issue: The relative cost of extending power network for each option needs to be incorporated.

Response: This item will be common to either option, and the costs less for piped option, so conclusions will not be affected.

Community Preferences

Issue: Despite the preferences expressed by farmers for piped distribution at workshops, the question “how much extra are you willing to pay for a piped system? needs to be asked at some stage.

Response: The community attitude investigation was to tease out the community attitudes about the social, environmental and cultural aspects, without regard to financial implications.

Appropriating Benefits

Issue: The substantial savings in costs for electrical energy under piped distribution are not evenly enjoyed by all users, and are not immediate benefits to scheme developers – finding a way for scheme developers to fairly appropriate these benefits will be a challenge.

Response: Agreed, but pricing mechanisms can be devised to reflect this equity issue.

Pressure Rating of Pipes

Issue: Pressure loadings in the piped system under transient conditions will need to be incorporated in final design and may require higher pressure classes than assumed.

Response: This would be an essential aspect of final design. Previous detailed studies for Barrhill showed that the shut off static pressures were more demanding than transients, but this will be scheme specific.

Risk Analysis

Issue: Final design will require a formal risk analysis for each option.

Response: Agreed but not relevant for the brief.

Best Use of Gravity Potential

Issue: Specific schemes may be best served by a mix of open channel and piped systems.

Response: Agreed, but not investigated.

Operational Losses

Issue: Investment in automated control systems could reduce operational losses in open channel options.

Response: This is a detailed design aspect, but insufficient allowance was made in case studies for structures needed to avoid operational losses, and hence costs would be greater if included.

Lining Cost

Issue: The assumptions as to need for lining and specifications have a considerable influence on costs.

Response: The selection of an open channel system that operates without grade control, as requested by URS, influences the study decision as to lining requirements and specifications – more geotechnical information would be needed to contra-indicate this assumption.

4.0 Assessment of Meeting

The meeting provided the opportunity for major stakeholders to participate in an open forum with the project team, and the discussions were open, frank and positive. The suggestions and comments made have been recorded and where appropriate, incorporated in the final report. This record is a valuable addition to the final report and will be of use to those using the report in specific project circumstances.

Annex 1: Meeting Attendees

Dr Terry Heiler	Heiler and Associates_Ltd	
Dr Nick Brown	Economic Consultant	
Rose Edkins, Ian McIndoe & John Bright	Aqualinc Research Ltd	
Craig Scott	Riley Consultants Ltd	
Sue Cumberworth	The AgriBusiness Group	
Ross Keeley & Geoff Stevenson	The Ritso Society	
Claire Mulcock	Mulgor Consulting	
Katherine McCusker	MAF, SFF	
Derek Crombie, Doug Catherwood & John Donkers	Central Plains Water Ltd	
Doug Marsh, Viv Smart, & Denis O'Rourke	Central Plains Water Trust	
Tony Davis	Amiantit/Maskells	
John van Polanen	Ashburton Lyndhurst Irrigation Scheme	
Hock Yeo	Beca	
Walter Lewthwaite & Cliff Tippler	URS	
Brian Ellwood	Meridian	
George Griffith	ECan	
John Wright	Barrhill Chertsey Irrigation Ltd	
David Viles & Todd Mead	Hurunui Irrigation Scheme	