

**EVALUATION OF
FLOW GUIDELINES FOR INSTREAM VALUES**

Boffa Miskell Limited

**A report prepared for the
Ministry for the Environment**

15 June 2001

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1.	INTRODUCTION	1
1.1	Background	1
1.2	Objectives Of Report	1
2.	OVERVIEW OF THE 'FLOW GUIDELINES'	2
2.1	Process For Developing The Flow Guidelines	2
2.2	Approach Outlined In Flow Guidelines	2
2.3	Purpose Of The Flow Guidelines	4
2.4	Limitations Identified In The Flow Guidelines	5
3.	METHODOLOGY	7
4.	FINDINGS	8
4.1	Awareness Of The Flow Guidelines	8
4.2	Usefulness Of The Flow Guidelines	9
4.3	Limitations Or Perceived Weaknesses Of Flow Guidelines	12
4.4	Suggestions For Improving Effectiveness Of Flow Guidelines	17
4.5	Recommendations On Other Future Work For The Ministry	21
5.	CONCLUSIONS & RECOMMENDATIONS	24
5.1	Conclusions	24
5.2	Recommendations For Discussion	26
Appendix 1	Questionnaire sent Regional Councils & Unitary Authorities	30

EXECUTIVE SUMMARY

Purpose of Report

The Ministry for the Environment (the Ministry) released the “*Flow guidelines for instream values*” (‘Flow Guidelines’) in May 1998. The documents sought to provide guidance to resource managers on how to set minimum flows and other flow requirements in order to sustainably manage the instream values of rivers.

Recently the Ministry has received antidotal evidence that users of the Guidelines, particularly regional council staff do not find the Guidelines as useful as they had hoped. In order address these concerns the Ministry for the Environment commissioned this report, which seeks to evaluate the Flow Guidelines from the perspective of regional council staff involved in water allocation and identify means by which the Flow Guidelines could be improved to enhance their effectiveness.

Overview of Flow Guidelines

The “*Flow Guidelines for Instream Values*” (Volumes A and B) were released by the Ministry for the Environment in May 1998. The Flow Guidelines outline a ‘process’ which could be adopted to determine flow regimes and provides a discussion on the techniques available for setting flow regimes. A review of the provisions in the Flow Guidelines is contained in Section 2 of this report, including a review of the limitations of the Flow Guidelines, which were identified when the document was published.

Methodology

The information contained in this report has been derived from conducting a series of meetings and telephone interviews with a range of regional council and unitary authority staff involved in water management. Interviews were carried out with 20 staff involved in water management from Northland Regional Council, Auckland Regional Council, Waikato Regional Council, Bay of Plenty Regional Council, Hawkes Bay Regional Council, Manawatu – Wanganui Regional Council, Wellington Regional Council, Tasman District Council and Canterbury Regional Council.

Summary of Conclusions and Recommendations

From the findings of the discussions held with a sample of council staff regarding their perceptions of the strengths, weakness and overall usefulness of the documents, a number of conclusions were drawn.

(i) Awareness of the Flow Guidelines

Prior to the release of the Flow Guidelines in May 1998, the Ministry adopted a number of initiatives for publicising the documents however it would appear that since the release of the Flow Guidelines, the documents have not been widely publicised by the Ministry.

(ii) Use of the Flow Guidelines

From the responses received it would appear that Regional Council staff have found the Flow Guidelines useful for the following purposes:

- As a Reference Document
- Bridging the information gap between policy and science
- As a ‘checklist’ of matters to be considered in managing flows for instream values
- Providing a framework/process for policy development in setting flow regimes in rivers
- Documentation which is endorsed by the Ministry for the Environment.

(iii) Limitations or Perceived Weaknesses of the Flow Guidelines

A number of perceived weaknesses of the Flow Guidelines which were identified by regional council were recognised as limitations of the documents at the time of their release. Such limitations include:

- The process for setting flow regimes in rivers only relates to providing for in-stream values and did not address out-of-stream use of the water resource.
- Did not provide guidance on prioritising between in-stream values.
- Did not adequately cover small streams.
- The Guidelines are one-dimensional and only cover managing flows in relation to sustaining in-stream values, and to sustain identified in-stream values, particularly ecological values a range of other factors need to be considered.
- Did not adequately address flow variability.

While a number of suggestions were made by interviewees on matters which the Ministry should address in any update of the Flow Guidelines, it is was also noted that many of the perceived limitations of the Flow Guidelines address issues of surface water allocation which are beyond the scope of the documents. Accordingly simply updating the Flow Guidelines would not address many of the issues raised by interviewees.

It is also considered that the lack of a clear understanding of the target audience and purpose of the documents were the basis of a number of issues raised by the regional council staff interviewed. Another issue raised was that a lack of resources limited Council’s ability to implement the procedures and techniques promoted by the Flow Guidelines.

(iv) Suggestions for Improving the Flow Guidelines and Other Work to assist Regional Council Staff in addressing Water Management Issues.

A range of comments were received on suggestions for updating and improving the Guidelines, however the two most commonly raised issues were the need for further work on allocating water for out-of stream resource use and managing water allocation in small streams. Different opinions were raised on whether these issues should be addressed by incorporating further information into the Flow Guidelines or whether they should be addressed in compendium documents which support the Guidelines.

RECOMMENDATIONS

The following recommendations have been derived as a result of the findings of this evaluation.

- 1) That the Ministry identify future opportunities for advising people involved water management of the existence of the “Flow Guidelines for Instream Values”.
- 2) That in advising people of the Flow Guidelines that the target audience, intended use and the limitations of the Guidelines be made explicit.
- 3) The Ministry consider updating the Flow Guidelines in particular those parts of the Flow Guidelines which may have become outdated since their release in 1998.
- 4) The Ministry investigate the development of a supporting document looking at Out of Stream Use of the Water Resource and in particular address water allocation techniques for out of stream resource use.
- 5) The Ministry investigate opportunities for assisting Regional Councils in addressing management of water allocation in small streams.
- 6) The Ministry consider, in consultation with scientific/technical staff in regional councils, the value of an independent review of the technical methods recommended for use in the Flow Guidelines, in particular the use of IFIM.

1. INTRODUCTION

1.1 BACKGROUND

The Ministry for the Environment (the Ministry) released the “*Flow guidelines for instream values*” (hereafter referred to as the ‘Flow Guidelines’) in May 1998. The documents sought to provide guidance to resource managers on how to set minimum flows and other flow requirements in order to sustainably manage the instream values of rivers.

The Guidelines were prepared in two Volumes. Volume A explains the basic principles of hydrology and hydraulics and then describes the instream values of rivers which resource managers are required to provide for in the context of Part II of the Resource Management Act. These instream values are categorised as: Ecological Values, Landscape Values, Recreation Values, and Maori Customary and Traditional instream values. The Guidelines then set out a clearly defined process for determining the flow regime in rivers, which will ensure the instream values, which are managed to a specified level of protection. Technical methods, which are available for determining the flow regime requirements, are summarised in the latter part of Volume A. Volume B of the Flow Guidelines is essentially a supporting reference document, which contains a further detailed discussion of the technical methods summarised in Volume A as well as other background material.

Recently the Ministry has received antidotal evidence that users of the Guidelines, particularly regional council staff involved in setting river flows and levels, do not find the Guidelines as useful as they had hoped. Although there have been a variety of suggestions as to the reasons for this, there has been no attempt to formally evaluate whether in fact users do find the Guidelines useful.

1.2 OBJECTIVES OF REPORT

In order to objectively evaluate the usefulness of the Guidelines to Regional Council staff and to assist in determining whether the Guidelines need amending and if so how they could be amended, the Ministry has commissioned a report which seeks to evaluate the Flow Guidelines. In particular, the objectives of the report is to:

1. Evaluate the strengths and weaknesses of the Flow Guidelines from the perspective of regional council staff involved in water allocation.
2. Identify means by which the Flow Guidelines could be improved to enhance their effectiveness.

2. OVERVIEW OF THE ‘FLOW GUIDELINES’

2.1 PROCESS FOR DEVELOPING THE FLOW GUIDELINES

The “*Flow Guidelines for Instream Values*” (Volumes A and B) were released by the Ministry for the Environment in May 1998. The Flow Guidelines were based on a document prepared principally by Ton Snelder and scientists from the National Institute of Water and Atmospheric (NIWA), together with input on policy issues by C Clarke, legal input from Bell Gully, input on landscape and recreation issues by Boffa Miskell Limited and Maori customary and traditional values by Tipa Associates.

An advisory group (known as the ‘Flow Regime Advisory Group’) comprising representatives from regional and district councils, the farming sector, iwi, the Department of Conservation, industry and environmental groups advised the Ministry on the scope and content of the guidelines and were directly involved in developing the terms of reference, assisted in selecting the consultants and reviewing drafts of the Guidelines.

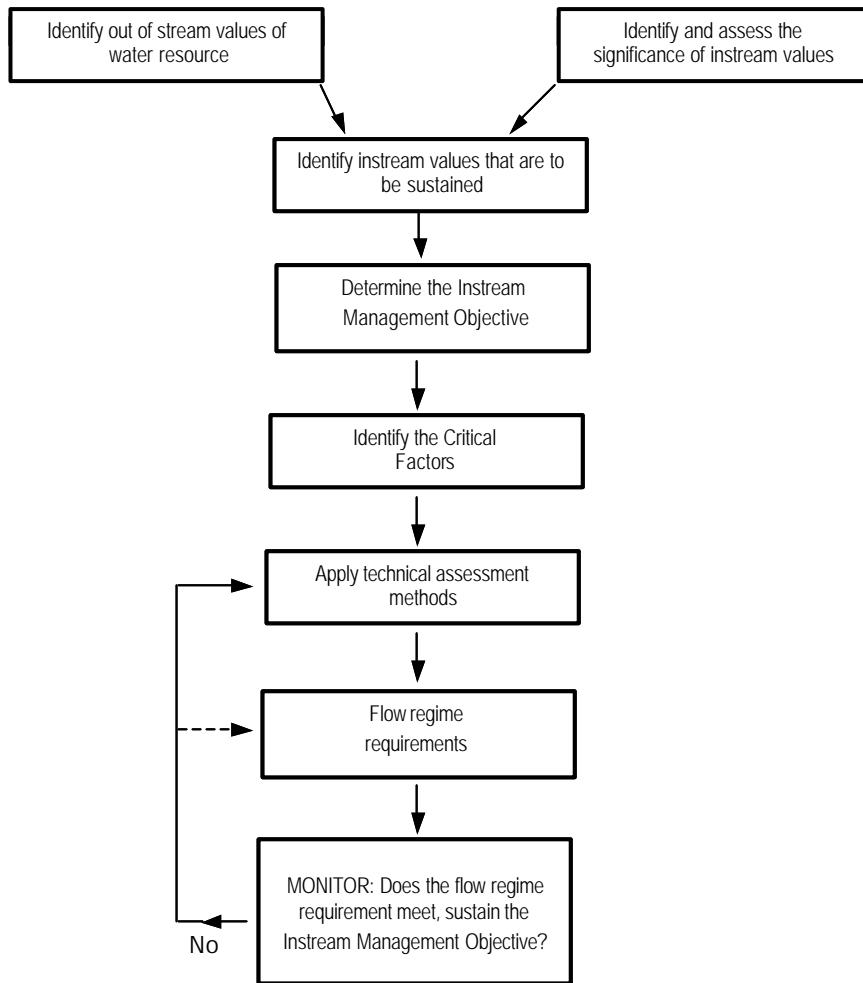
During the development of the Guidelines the Ministry also sought the views of a range of people involved in water management issues, including a submission process where people involved in water management around the country were invited by the Ministry to comment on a draft of the Flow Guidelines.

2.2 APPROACH OUTLINED IN FLOW GUIDELINES

The Flow Guidelines were intended to provide guidance to resource managers on how to set minimum flows and other flow requirements in rivers. The Flow Guidelines outline a consistent approach or ‘process’ which could be adopted to determine flow regimes. In addition to setting out a process for identifying instream values, the guidelines provide a discussion of the techniques available for setting flow regimes.

It should be noted that the Flow Guidelines state “*the guidelines should be used in the context of a ‘holistic’ approach to river management. It is assumed that users of the guidelines have already determined that flow management is the critical issue that needs to be addressed.*”(Page 14, Volume A of the Flow Guidelines).

The decision making process recommended in the Flow Guidelines is set out in Figure 1, Volume A of the document and is reproduced below:



In summary the process recommends setting an 'Instream Management Objective' for the river and then setting a flow regime to meet the objective, based on the application of technical assessment methods. The Flow Guidelines review the technical methods available for determining the flow regime required to sustain identified instream values.

The technical methods produce a 'Flow Regime Requirement' which is the flow regime that will sustain the Instream Management Objective selected. The flow regime requirement may be an annual minimum flow, or it may be a certain flow at a particular time of the day.

2.3 PURPOSE OF THE FLOW GUIDELINES

It is stated in the Flow Guidelines that they were developed for three main purposes as follows:

- **Consistency:** A range of different methods and techniques have been used by regional councils for determining flow requirements for river systems, and there has been little consistency between councils. A purpose of the document was to provide a consistent framework that can be used throughout the country. This does not mean that the same method should be used throughout the country, rather the most appropriate methods should be selected for a particular location.
- **Information:** Water managers have lacked readily accessible information on the effects of altering the flow regimes of rivers, in particular the effects on aquatic communities. Information on technical methods for defining flow regime has also been lacking. The purpose of the guidelines is to provide an up-to-date summary of available information.
- **Understanding:** Another purpose of the guideline was to assist water managers to increase their understanding of the methods for setting flow regimes, their use and limitations.

The Flow Guidelines also state they are targeted at the following user groups and suggest they will assist these groups, a number of ways, as follows.

- **Assist decision makers in regional councils** with:
 - Identifying and assessing the type of instream values that may be present in a river system.
 - Determining objectives and policies which promote the sustainable management of instream values
 - Determining appropriate techniques and methods to use in assessing the flow requirements needed to sustain the instream values.
 - Identifying appropriate methods to monitor the state of the instream values and the effects of activities which alter flow regimes.
- **For water resource users involved in statutory processes** under the RM Act, the purpose of these guidelines is to:
 - Provide information on the effects an activity might have on a river or stream
 - Assist with the preparation of assessment of environmental effects in an application for a resource consent
 - Assist with the preparation of submissions to, or comments on, policy statements or plans.
- **For tangata whenua**, these guidelines set out 'typical' instream values that iwi may consider important. It is acknowledged each iwi and hapu has different and specific values associated with their waterways. The Ministry for the Environment strongly recommends that water managers consult with tangata whenua to determine the specific instream values for a particular river system.

However, there are generic values, such as mahinga kai, that apply across New Zealand and can be usefully discussed in this document.

For interested parties, such as environmental groups, these guidelines seek to provide information that will assist individuals to participate in the statutory process.

(Refer to Page 25-26 of Volume A of the Flow Guidelines)

2.4 LIMITATIONS IDENTIFIED IN THE FLOW GUIDELINES

The Flow Guidelines acknowledged in various sections of Volume A that the documents do have limitations. The following limitations were noted in the document, particularly in Section 2.3 of Volume A of the Flow Guidelines.

- **They do not address out-of-stream resource use and how to allocate water for such uses.** It is stated in the Guidelines that they do not cover methods for resolving conflicts between out-of stream use and instream values, and that they only address how to manage flows to provide for instream values. They state the conflicts between out-of stream use and instream values must be resolved on a case by case, taking account of the particular instream values and out-of-stream uses, and using Part II of the RM Act to guide the decision.
- **The Guidelines only consider managing flows to provide for instream values.** The Guidelines acknowledge that ‘flows’ are only one of the components of water management that need to be considered by water managers. The Guidelines note that to sustain certain values, such as ecological values, other factors may need to be considered, for example riparian or land use practices. The guidelines do not deal with all river management issues and state that users of the guidelines should have already determined that flow management is a critical issue that needs to be addressed.
- **The guidelines do not adequately cover flow variability.** The Guidelines state they present a state of the art discussion on the need for flow variability, but adequate scientific understanding to provide accurate guidance on the flow variation needed to sustain instream values, particularly ecological ones, requires further research.
- **The guidelines do not adequately cover small streams.** It is acknowledged that most of the research on flow regimes has been undertaken on larger rivers in New Zealand. Furthermore that models developed for larger rivers may not apply to small streams. It is also noted that in small streams it may not be cost effective to undertake detailed investigations such as habitat modeling. It is stated that ideally easily applied “rules of thumb” are needed for setting flows on small streams. At present there is not enough information to develop these “rules of thumb” and primary research is needed on the hydrology and ecology of small streams. The Flow Guidelines state that future research needs to focus on: (1) transferring hydrological records from larger streams onto small streams; and (2) the ecological functioning of small streams.

- **River typing tools need to be developed.** The Guidelines state that limited use of the concept of “river types” is made in the guidelines. By using the river typing approach it may be possible to transfer information easily from one river to another of a similar type. This would reduce the need to collect information for every new situation. It was acknowledged in the Guidelines that the Ministry was currently undertaking new work in this area, at the time of preparing the documents.
- **No guidance was provided on identifying specific instream values and their significance.** The Ministry did acknowledge in the Flow Guidelines that it was working towards developing guidelines that will assist water managers identifying instream ecological values and their significance.

3. METHODOLOGY

The information contained in this report which assesses the strengths and weaknesses of the “Flow guidelines for instream values” and their overall usefulness from the perspective of regional council and unitary authority staff involved in water management, has been derived from conducting a series of meetings and interviews with staff from these councils, or in some cases with staff who have recently left employment with these organisations.

Interviews were carried out with a range of different people in these organisations including managers, policy analysts involved in policy and plan development, scientists and technical staff involved in investigations and monitoring and staff involved in the processing of resource consent applications.

Interviews were carried out with 20 staff involved in water management from a sample of Councils¹ selected from across the country. The Councils from whom staff were interviewed were Northland Regional Council, Auckland Regional Council, Waikato Regional Council, Bay of Plenty Regional Council, Hawkes Bay Regional Council, Manawatu – Wanganui Regional Council, Wellington Regional Council, Tasman District Council and Canterbury Regional Council. The interviews were carried out between 26 April and 21 May 2001.

It is noted that the Ministry sent e-mails to 41 people involved in water management in Councils through out the country in late March 2001, inviting them to be participate in this evaluation of the Flow Guidelines. Only two Councils responded and offered to take part in the evaluation.

A copy of the questionnaire used as the basis for the interviews is attached as Appendix 1. The interview questions were forwarded to all of the interviewees prior to conducting the interviews.

Following the interviews, the information obtained was collated and was used as the basis for the findings and observations discussed in this report. However, it should be noted that the information obtained is discussed anonymously in this report.

¹ Note: Through out this report the use of Councils or Regional Councils includes regional councils and unitary authorities.

4. FINDINGS

The findings of this report are based on information derived from a series of interviews with a range of regional staff involved in managing the surface water flows of rivers. These findings have been discussed under the following headings

- Awareness of the Flow Guidelines
- Use of the Flow Guidelines
- Limitations or Perceived Weaknesses of Flow Guidelines
- Suggestions for Improving Effectiveness of Flow Guidelines
- Recommendations on Future Work for the Ministry

4.1 AWARENESS OF THE FLOW GUIDELINES

The level of awareness of the existence of the Flow Guidelines of the regional council staff interviewed varied considerably. It ranged from people who had a detailed knowledge of documents, to four people interviewed who had never heard of the documents until being interviewed as part of this evaluation.

Those interviewees who were aware of the documents, had been made aware of the documents through:

- Involvement in the development of the documents, including reviewing and lodging submissions on early drafts of the document and membership of the Flow Regime Advisory Group who oversaw the development of the Guidelines,
- The Ministry sending copies of the final version of the Flow Guidelines to their Council following their release in May 1998,
- Presentations on the development of the Flow Guidelines given at a workshop held in March 1997, hosted by the Ministry for water planners and hydrologists and at a meeting of LIMSOC at about the same time,
- Being referred to the documents by other work colleagues or,
- Own self-initiatives had obtained and reviewed copies of the Flow Guidelines.

It is noted that three of the four interviewees who were unaware of the Guidelines prior to being contacted as part of this evaluation were policy analysts and planners and all of them had only become directly involved in surface water management issues in their respective councils since 1998 and after the release of the Flow Guidelines.

It should be noted seven of the interviewees made the specific comment that they thought the Guidelines had not been widely publicised since their release in 1998. Three of the interviewees who were unaware of the existence of the Flow Guidelines prior to being contacted as part of this interview, also commented that the Flow Guidelines had not been referred to, at the Water Allocation Workshop hosted by the Ministry in Wellington in December 2000.

4.2 USE OF THE FLOW GUIDELINES

From those people who were aware of the Flow Guidelines, the amount of use that had been made of the documents was also highly varied, from people who had not used the guidelines for a number of perceived constraining factors or because they believed the documents were of no real benefit, to those people who had directly used the guidelines to assist them in carrying out their roles within the Council.

The manner in which the people interviewed had ‘used’ the Flow Guidelines or comments received on particular parts of the Flow Guidelines which interviewees had found useful, are summarised below:

- **Use of Recommended Process for Setting Flow Regimes in Rivers in Figure 1, Volume A of Flow Guidelines**

A number of interviewees commented that they had found useful the recommended process for setting the flow regimes in rivers in particular the concept of developing Instream Management Objectives and deriving flows to protect these instream values to a defined level, however many had not specifically used the process for a number of reasons, which are discussed in Section 4.3 below. It was also commented that it was a useful framework for integrating policy development with science. In addition comments were received stating that process was a useful reference of the matters to be considered in setting minimum flows.

- **Resource Consent Processing -Use of Recommended Process for Setting Flow Regimes in Rivers**

One interviewee had used the decision making process recommended in Chapter 10 of Volume A in assessing resource consents applications for large water take consents and in determining the conditions of consent. In particular the process recommended in the guidelines (including identifying the instream values present, assessing the significance and the level of protection to be afforded to these values, determining the ‘Flow Regime Requirement’ necessary to support the instream values to desired level and then assessing whether the proposed activity met this flow regime requirement), formed the framework of the evaluation section of the officer’s report, with Figure 1 in Volume A of the Flow Guidelines which summaries the “Decision-making process recommended in these Guidelines” being specifically quoted in the report. As no specific instream management objectives had been derived by the regional council for the rivers being assessed, the level of protection to be afforded to the instream values identified was based on the provisions in Part II of the RM Act, relevant provisions in the Regional Policy Statement and matters raised in submissions.

- **Development of Non Statutory Water Allocation Plans - Use of Recommended Process for setting Flow Regimes in Rivers**

Interviewees from one Council commented that they had used the Decision making process recommended in the Flow Guidelines for setting the recommended flow regimes in non statutory water allocation plans for individual catchments which the Council were developing. In particular the process for developing these plans was being refined to place more emphasis on identifying 'Instream Management Objectives' and then deriving minimum flows based on protecting to certain level a range of identified instream values.

- **Use of Document as a Reference Document or "Checklist"**

Nine interviewees specifically commented that the Flow Guidelines were a useful reference document, similar to a textbook, providing background information on the range of issues, which need to be considered in managing flows in any given situation. It was also commented that Flow Guidelines canvassed a range of issues relating to managing flows to support instream values, and that a user would simply refer to those parts of the document of direct interest to obtain background information. It was commented by one interviewee that they are not something you use, instead *"they provide concepts and ideas that you take away and adapt to real situations"*.

- **Use of Case Studies In Flow Guidelines**

One interviewee specifically commented that the case studies outlined in the guidelines were useful in setting out how the principles outlined in the Guidelines could be applied.

- **Review of Technical Methods for setting Flow Regimes for Ecological Values**

A range of comments was received on the usefulness of discussion in the Flow Guidelines on technical methods for setting flow regimes for the management of ecological values.

Most of the scientific / technical staff interviewed stated that the guidelines provided a useful general overview of commonly used techniques for setting flow regimes for biological values however a range of comments were also received from these interviewees on the limitations of the discussion on the technical methods. The concerns raised are discussed in Section 4.3 below.

It is noted three interviewees who were involved in policy development and had not had a scientific/technical role in water management commented that the review of the technical methods was useful in helping them understand the scientific techniques commonly used for setting flows, the reason for using them, and how the information provided, supported policy decisions being made.

- **Useful the Review of Purpose and Principles of the R M Act in Volume A**

Four interviewees specifically commented the review of the provisions in Part II of the Resource Management Act (RM Act) in Chapter 5, Volume A, including identifying the instream values and weightings that should be given to particular values based on the provisions in the Act and relevant case law; provided a useful understanding of the legislative framework within which to consider flow management issues.

- **Useful the Sections dealing with Maori Customary and Traditional Instream Values**

Three interviewees specifically commented that the chapters in both Volumes A and B of the Flow Guidelines dealing with Maori Customary and Traditional Instream Values assisted in providing a better understanding of the ‘typical’ instream values that iwi may consider important.

- **Useful the Sections dealing with Landscape and Recreation Values**

One interviewee commented that the Guidelines provided a useful guide to linking landscape values and recreation values to the issue of managing flow.

- **Useful the Review of the Effects of Activities and Changes in Flow Regimes on Instream Values**

One interviewee specifically commented that he had found useful, those parts of the Guidelines which reviewed the ‘effects’ of different activities on flow regimes as summarised in Volume A of the Guidelines and the more detailed discussion in Volume B on the range of effects likely to arise from changes to the flow regime. It was stated this section provided a ‘good review’ and was a useful source of reference.

- **Ministry for the Environment’s endorsement of Flow Guidelines**

One interviewee advised the Flow Guidelines had been used in the preparation of a new policy document currently being developed by the Council dealing with water takes, damming, use and diversions. It was stated that the Guidelines provided a useful checklist of the matters to consider but also as the Ministry had produced the Guidelines, this provided some authenticity and support from a national level to the approach the Council was adopting. For this reason parts of the Flow Guidelines were quoted in the policy document prepared. Another interviewee commented staff quoted the guidelines in preparing papers to Council politicians on the setting of flows.

Related to this was the comment of one interviewee that managing flows in rivers and water allocation is an emotive issue and that the Guidelines are useful in that they “provide a good ‘independent’ review of the issues” and the matters to be taken into account, which can be referred to water uses and other stakeholders.

- **Readability of the Flow Guidelines**

A range of comments were received on the readability of the documents. Three interviewees specifically stated that they thought the Guidelines were easy to read. However opposing comments about the readability of the documents were also reported, and these are discussed in Section 4.3 below.

4.3 LIMITATIONS OR PERCEIVED WEAKNESSES OF FLOW GUIDELINES

Those people who had ‘used’ the Flow Guidelines also raised a number of issues regarding the constraints and perceived weaknesses of the documents, which are summarised below:

- **Practical Application of Flow Guidelines are limited by not addressing Out of Stream Resource Use**

Six people interviewed specifically noted that the allocation of water to sustain instream values is “only half the picture”. It was noted that the issue of balancing between instream and out of stream resource use is fundamental and that only one half of the decision making process is represented in the process outlined in Volume A of the Flow Guidelines.

It was noted by a number of interviewees that this was a major constraint to implementing the process set out in the guidelines. It was commented that any decisions on setting minimum flows by Councils needs take into account both instream and out of stream resource use.

One interviewee stated that setting “*minimum flows is only part of the picture. Water allocation is the other major part that is hardly touched on in the Guidelines. It was commented that setting minimum flows must be integrated with water allocation (out of stream resource use), otherwise setting minimum flows is a futile exercise*”.

- **Prioritising between Instream Values and between Instream Values and Out of Stream Resource use is difficult**

A number of general comments were made by people interviewed that the adoption of the process outlined in Volume A, in particular setting instream management objectives is a difficult and timely process. Furthermore, nearly all people interviewed stated that resolving the conflict between managing for instream and out of stream resource use was an issue Councils were grappling with.

- **Ability to adopt process in Flow Guidelines was constrained by lack of information on instream values of rivers**

A number of interviewees noted that the development of instream management objectives and developing flow management regimes to provide for instream values was constrained by a lack of available information on the rivers they were managing.

One interviewee commented that the Council did not have a full enough understanding of the rivers they were managing in the region to be able to identify the instream values present and the relative significance of the instream values. Another interviewee commented that the approach set out in the Guidelines is ‘information – hungry’ stating the ability of a Council to adopt the process set out in the Flow Guidelines would be limited by the amount of information they have on the resources they are managing.

General comments were made by interviewees that they endorsed the decision making process for setting flow regimes set out in the Flow Guidelines. However, due to time pressures to develop and release a plan or policy document or due to lack of available resources, Council were often not able to define instream values to define an Instream Management Objective and specify specific Flow Regime Requirements.

- **Flow Guidelines are one dimensional –Factors other than flow management identified as more important to sustaining instream values**

Several interviewees commented the guidelines were one-dimensional and that flow management was not seen as a critical factor in managing rivers to support instream values, particularly in small streams. A range of other variables (such as control of discharges, riparian management, BOD, clarity and temperature) were seen as important in determining the physical conditions necessary to sustain the instream values identified in the rivers and streams being managed in the particular region.

One interviewee stated seeking to provide for an identified instream management objective by setting a minimum flow may be appropriate for larger rivers where flow has been identified as a critical factor, however in small streams other factors often have a greater impact on achieving an instream management objective than flow.

For these reasons several people commented that they did not find the Guidelines to be particularly useful.

Two interviewees stated a total catchment management approach was more likely to be required or appropriate for managing small streams and that flow was only one dimension. It was also stated that the effects of parameters other than flow are more likely to be dissipated in larger rivers, which were the basis of many of the examples used in the Guidelines.

- **Lack of understanding of relationship between groundwater inflow and surface water flow**

It was commented a lack of understanding of the relationship between the dynamics of ground water inflow and the surface water flow of rivers was a limiting factor in seeking to set flow regime requirements by three interviewees. It was also commented that the connection between the effects of groundwater takes on stream flows is not well spelt out in the guidelines.

- **Lack any indication of when it is Not appropriate to set Minimum Flows**

It was stated by one interviewee, that in some circumstances there are no significant instream values and it is not appropriate to invest the resources in setting minimum flows. It was stated that setting minimum flows is an expensive exercise and Councils need to target it to high value resources or resources under pressure.

- **Concept of identifying a “Critical Factor” is too simplified**

One interviewee stated the ‘critical factor’ approach, described on Page 94 of Volume A, is too simplistic. It is stated that the critical factors discussed in the Guidelines are all based on dimensions of flow such as the size of minimum flows, and timing of flow releases. It was noted that the later development of the “River Ecology Management Framework” (REMF) model was ‘good’ as this moved away from the “critical factors” approach referred to in the Guidelines.

The commentator also stated the Guidelines could be updated to reflect the REMF model (River Ecosystems Management Framework) being developed by the Ministry and NIWA.

- **Flow Guidelines do not address management of small streams**

A large number of interviewees commented that one of the shortcomings of the Flow Guidelines was they did not address small streams, which made up the majority of the watercourses in their region. These comments were all received from technical /scientific staff who raised the following specific issues regarding the use of the Guidelines.

- (i) The Guidelines are targeted at managing flows in large high value rivers, such as commonly occur in the South Island, and not small lowland streams.
- (ii) The Guidelines only address the management of flow to provide for instream values. It was noted that in the case of small streams, that the management of physical variables other than flow are likely to be more important in achieving the instream management objectives in small streams.

- (iii) The methodologies and techniques promoted in the Flow Guidelines for setting flows are not appropriate for developing a flow management regime for small streams, in particular the use of IFIM.
- (iv) An overall catchment management approach is often required for the management of small streams and this is not addressed in the Flow Guidelines.

- **Lack of Critical Analysis of Technical Methods for setting Flow Regimes**

Some of the interviewees from a scientific/technical background were critical of the discussion in the Guidelines on the techniques for setting flow regimes for ecological values. In general it was stated that while the discussion provided a general overview, it could not be used as a technical reference document. It was commented that there is no critical analysis of the methods for setting flow regimes described in the Guidelines and when it is appropriate to use the Guidelines and when it is not. It was also commented that the Guidelines provided no reference material on where to obtain further information on the technical methods discussed.

- **Use of IFIM (Instream Flow Incremental Methodology)**

A range of comments were received from scientific/technical staff regarding the reference to the use of IFIM in the Guidelines. One interviewee stated that while the Guidelines reviewed a range of methods, the documents then appeared to promote the use of IFIM. Other interviewees stated that the guidelines appeared to promote IFIM and raised the following concerns about the technique.

- (i) IFIM is not appropriate for use in small streams,
- (ii) IFIM does not take into account the different life stages of species,
- (iv) IFIM was not relevant for the types of streams being managed in their Council's region
- (v) IFIM did not take account of groundwater fed streams
- (vi) IFIM is expensive to implement.

- **Limited discussion on Flow Variability**

Comments were received that flow variability is very complex and there is not much discussion on flow variability in the guidelines.

- **Monitoring**

Three interviewees stated that the discussion on monitoring in the Flow Guidelines was too simplistic. In particular it was commented that the statement, "does the flow regime sustain the Instream Management Objective" in Figure 1 of Volume A, was too simplistic (particularly for small streams) and that a range of other factors may be

influencing why an instream management is being achieved or not. It was further stated that it is important to monitor more than the flow regime to determine if the instream management objective is being met.

- **Issue of Timing – Flow Guidelines were released after Policy Documents developed**

Staff from two Councils stated their Regional Plans addressing management of flows were already well developed prior to the release of the Flow Guidelines and therefore they had not specifically used them. Other interviewees commented that the Flow Guidelines were likely to be more useful in the production of second generation plans, particularly Councils who had identified in first generation policy documents that they do not have sufficient information to set minimum flows and water allocation at present but were looking at doing further work in this area.

- **Flow Guidelines are too long and wordy**

Some interviewees (particularly those who had not read them) perceived the documents to be lengthy, technical and difficult to read. People that had read them also commented they were “too long and wordy” or that they “try to cover too much”. Comments were also made that the Guidelines are “fairly big” which could put people off using them.

- **Flow Guidelines are too simplistic**

Statements were made that the Guidelines were too simplistic, generally by people in a scientific/technical role. One interviewee commented he considered the “Guidelines were aimed at Policy people” and did not teach him anything he did not already know. Other comments stated that some of the discussion was in the documents “was fairly obvious to anyone working in the Resource Management field”.

- **Target Audience of the Flow Guidelines is not well defined**

Comments were made that the target audience of the Flow Guidelines was not well defined and it difficult to determine if they were effective or not, as people were not sure whom they were pitched at. One interviewee commented the Guidelines appeared to be targeted at people involved in water resource management in regional councils, however people already know a lot of what is in the guidelines.

The same interviewee stated that the guidelines need to be targeted at the public or consent officers at the coalface but were constrained as they were too detailed and “not customer friendly”.

In relation to this was the comment that the Flow Regime Advisory Group was made of people at the “high end of the market” who already had a detailed understanding of flow management issues and that the guidelines would have been enhanced during the development of the documents if there had been more involvement from people “at the coal face”, technical staff and resource users.

- **Most Case Studies were not relevant or concentrated on South Island Examples**

Comments were received from people interviewed in the North Island that the case studies were generally not relevant to the type of issues they were facing, in particular the management of water allocation in small lowland streams. Comments was made that “most of the case studies related to big stable rivers without much seasonal fluctuation”, typically found in the South Island.

It was also commented by one interviewee that NIWA hydrologists who were based in Christchurch principally developed the Guidelines and the concepts tended to be based on South Island experiences.

Some interviewees noted that the predominant type of activity they were seeking to address was the use of surface water for irrigation purposes by a large number of individual users. It was commented that these types of activities were not addressed in the case studies used in the Guidelines.

- **Landscape and Recreation Sections of limited use as not a significant Instream Values in the Region**

Comments were received that these sections were of limited use as managing for those instream values was not a significant issue in their region.

- **Review of Part II of RM Act not Useful**

One interviewee commented that the review of the provisions in Part II of the RM Act in Chapter 5 of Volume A were “not particularly useful” and that it needed to be updated to incorporate recent case law.

4.4 SUGGESTIONS FOR IMPROVING EFFECTIVENESS OF FLOW GUIDELINES

Interviewees were asked “How do you think the Guidelines could be improved or made more useful?”

In response to this question, it should be noted that five interviewees stated that the Ministry should not look at updating or improving the Flow Guidelines, either stating the Guidelines were useful in their present form or that the Ministry should focus their attention and resources on other suggested initiatives.

- **Matters to Address in Updating the Flow Guidelines**

Six interviewees commented that updating the Guidelines could be a useful exercise. In particular comments were received on particular parts of the Guidelines, as follows:

(i) Updating Case Studies

Three interviewees commented that the guidelines could be improved by updating the case studies to include examples on the use of the methods detailed in the guidelines, how well they worked or not, the situations they proved to be useful and the limitations experienced. Reference was made to Paul Mosley's work on the Ashley River in Canterbury as a case study example that could be included.

(ii) Update Technical Methods and provide a detailed critical analysis of the methods recommended.

It was recommended by a number of scientific/technical staff that increased detail should be provided in the Guidelines on the range of technical methods available and further critical analysis of the strengths and weaknesses of the methods. It was also suggested that the Guidelines would be improved if reference material was documented directing the reader to further detailed reference sources on the techniques discussed.

It was also suggested that the Guidelines be updated to include reference to new technical methods, including Wai Ora, REMF, RHYHABSIM and Low Fat.

(iii) Improving methodologies and increased discussion on the relationship between groundwater abstraction and surface water flows.

It was noted by two interviewees that the Guidelines could be enhanced by the inclusion of further discussion on the interrelationship between groundwater inflows and surface water flows.

(iv) Issue of 'Reversibility' of effects of changes in flow regime

It was suggested by one interviewer that the guidelines could be improved by developing further the issue of the "reversibility" of effects; in particular that adverse effects on instream values arising from changes in flow regime can be reversed in the long term. Addressing comments by water users that "the fish will come back" prompted this comment by the interviewee.

(iv) Set out the Ring Fence or Limitations of the Guidelines much more clearly

One interviewee stated the limitations and 'ring-fence' of the Guidelines and the limits of their practical application. needed to be set out a lot more clearly in Volume A of the documents.

(iv) Updating section on Part II of the RM Act

Two interviewees commented Chapter 5 of Volume should be updated include recent case law directives, particularly in relation to cultural issues and water allocation.

(v) Bring in ‘Eco-typing’ to the Guidelines

(vi) Consultation

Amend Figure 1 in Volume A to refer to consultation in determining flow regime requirements.

(vii) Landscape and Recreation sections needs could be improved.

Comments were made that the landscape / natural character and recreation sections of the Guidelines were very general and that these sections could be improved to provide more guidance in addressing these issues in managing the flows in rivers.

(viii) Refine discussion on effects of changes in flow regimes

One interviewee commented he had found the discussion on the effects of activities on flow regimes and the effects of changes in flow useful, but stated it was very resource intensive and the Guidelines should be bolder about identifying the type of effects to be considered in relation to particular types of rivers.

(ix) Maori Cultural and Heritage Issues

It was noted that dealing with tangata whenua issues is very complex and that if the Ministry considering improving the Guidelines, then further information on providing for Maori instream value which would assist regional council staff in understanding and quantifying these issues would be of assistance.

(x) Expand the Discussion on Monitoring

It was commented that the last box in Figure 1 of the Guidelines stating Monitor: “Does the flow regime requirements meet, sustain the Instream Management Objective” is a matter which is often forgotten and needs to give stronger emphasis in the guidelines and needs to be acknowledged as an intrinsic cost of the project.

Defining critical indicators for monitoring was also noted as a suggested improvement. In addition further information was sought on how and where you monitor flows and what should be the response if they are breached. The inclusion of methods for reconciling the differences between actual water takes and consented takes was also suggested.

(xi) Provide further discussions on how Land Use activities affect water yield

Affects of land use was considered to be an important physical parameter affecting the flow yield of rivers and it was considered further discussion on this issue would be of assistance.

- **Increase Level of Awareness of Regional Council of Use of Flow Guidelines**

Comments were made that the Ministry could do more to promote the Flow Guidelines. Suggestions for increasing the level of awareness of regional council staff of the existence of the Flow Guidelines included putting the Guidelines on the Ministry's website as a PDF File and advising regional council staff in involved water management of the existence of the guidelines at forums being hosted by the Ministry.

- **Practical Training and Workshops on the Flow Guidelines**

Comments were received that a training workshop on the use of the Guidelines may be useful, however comments were also made that setting flows and allocating water requires a multidisciplinary team and as such any practical training and education would need to be targeted. For example there is no point in teaching a hydrologist about community consultation. It was commented that practical training might instead be more appropriate for the introduction of new techniques in flow management. In terms of training, comments were made that any future training on the use of the Flow Guidelines should focus on their practical application

- **Development of a User Guide**

The development of a user guide or stand-alone executive summary document describing the content, scope, use and limitations of the guidelines was also suggested.

One interviewee suggested that it was not necessary to review the Guidelines but that more would be achieved by producing a 20-30 page guideline looking at options for managing minimum flows where to set them and why. It was suggested this development should be targeted at resource consent processing staff, water users and community groups and other interest groups with an interest in water allocation issues and used as a public education document.

It was also commented that the Guidelines could be improved by simplifying them to include cartoons and bullet points to explain ideas.

- **Increase Level of Awareness of People, other than Regional Council of Use of Flow Guidelines**

Comments were made that more could be done by the Ministry to increase the awareness of people other than regional council staff of the existence and use of the Guidelines including the consultants preparing resource consent applications for large water takes and groups involved in submitting on water management issues. It was also suggested that Guidelines be referred to resource consent processing staff, water users and community groups though this was qualified by comments that the

guidelines would need to be condensed and made more ‘user friendly’ for such audiences.

4.5 RECOMMENDATIONS ON OTHER FUTURE WORK FOR THE MINISTRY

In addition to comments made by interviewees, which specifically related to enhancing the effectiveness of the Flow Guidelines, the following additional recommendations were made on future work initiatives by the Ministry.

- **Do not expand scope of Flow Guidelines but develop Compendium Documents**

Five interviewees specifically stated the Flow Guidelines should not be updated, but instead recommended issues beyond the scope of the Flow Guidelines, in particular allocation of water for out of stream resource use, which should be addressed in compendium document which support the Guidelines.

- **Further Work on Methods for Allocating Water for ‘Out of Stream’ Use**

A lot of comment was received on the need to provide further information on various methodologies for regional councils to allocate water, particularly for out-of-stream resource use. In particular interviewees sought that the Ministry provide directives and information on techniques which are available on how to address prioritisation of water for out of stream resource use and review different methods being used around the country, including specific allocation techniques such techniques being used by Hawkes Bay Regional Council, methods of prioritising users, and the use of transferable water permits.

Two interviewees specifically mentioned that it would be useful if the Ministry provided directives on how to provide for long term certainty of users who have invested in costly infrastructure (such as dams or irrigation systems) who want long term security of water use.

Three interviewees specifically also specifically mentioned ‘dams’ and sought the Ministry provide assistance in addressing the effects of restrictions on flows by dams and how to prioritise between this and the allocation of residual flow for other water resource users.

Three interviewees also mentioned issues surrounding Section 14(3)(b) and the taking of water for reasonable domestic needs or the reasonable needs of animals for drinking water. It was noted that a number of Councils had defined what was ‘reasonable’ through provision in regional plans. It was suggested that national guidance from the Ministry on what is considered to be ‘reasonable’ would be of assistance to regional councils.

One commentator however noted

“There is already sufficient information on various methodologies for regional councils to allocate water and establish minimum flows in rivers. These methodologies require:

- *Sufficient data on physical (e.g.: hydrology) or biological characteristics of rivers, which will differ from river to river;*
- *Sufficient consultation*
- *Establishing the purpose for which a river is to be used; and*
- *Above all, a commitment by decision makers to establish water allocation for rivers.*

It is noted that nearly all these comments sought that the issue of water allocation should be addressed by the Ministry as a separate issue and not be addressed through expanding the scope of the Flow Guidelines to address ‘allocation’ issues.

It was also sought that any future information prepared by the Ministry on methodologies for water allocation for out of stream resources should be presented as a practice guideline, with an indication of the appropriate circumstances in which to use the Guidelines and what the methodologies will deliver.

In addressing water allocation it was stated that education and training was not only needed by Regional Council staff but also other interest groups and stakeholders such as VegFed, Iwi, Fish and Game and DoC.

- **Undertake Further Work on managing Water Allocation in Small Streams**

In line with comments noted in Section 4.3 of this report that the Flow Guidelines do not address management of small streams, several interviewees sought that the Ministry initiate further work on the management of water allocation in small stream management.

- **Riparian Management**

One interviewee sought the Ministry undertake further work on ‘riparian management’.

- **Increased Training for Iwi**

Upskilling iwi in dealing with water allocation issues was identified as another suggestion, particularly assisting them in identifying instream objectives for rivers and streams.

- **Role of Ministry in Information Dissemination Supported**

Three interviewees supported the Ministry’s role in orchestrating workshops and other initiatives, which disseminate information to water managers in regional councils.

- **Direction by the Ministry**

One interviewee commented that the Ministry needs to be mindful of not being too directive and the need to recognise local issues in carrying out future work.

- **Avoid using Senior Managers in review role for further Guidelines**

One interviewee made the comment that the Ministry needed to steer away from constantly targeting senior managers in the peer review of guidelines and other documents it produces and to focus more on involving the target audience of the documents produced, such as council staff 'at the coal face' including those in processing resource consents, as well as community groups and water user committees.

5. CONCLUSIONS & RECOMMENDATIONS

From the findings of the discussions held with a sample of regional council staff regarding their awareness of the Flow Guidelines and perceptions of the strengths, weakness and overall usefulness of the documents, a number of conclusions have been drawn as follows:

5.1 CONCLUSIONS

(i) Awareness of the Flow Guidelines

Prior to the release of the Flow Guidelines in May 1998, the Ministry adopted a number of initiatives for publicising the documents, including a submission process on drafts of the document, presentations at workshops for water managers and the distribution of copies of the documents to regional council involved in water management at the time of their release. It would appear, however that since the release of the Flow Guidelines, the documents have not been widely publicised by the Ministry. It is noted four of the twenty regional council interviewees were not even aware of the guidelines until being approached as part of this study.

(ii) Use of the Flow Guidelines

From the responses received it would appear that Regional Council staff have found the Flow Guidelines useful for the following purposes:

- **As a Reference Document** on a range of aspects of setting minimum flows and other flow regime requirements in rivers to provide for the management of instream values, including a review of the instream values which need to be considered in managing the flow of rivers and a general overview of commonly used techniques for setting flow regimes, particularly for ecological values.
- **Bridging the information gap between policy and science**, by providing staff from a policy background ground with an understanding of the scientific principles behind managing flows and the technical methods available for determining flow regimes. In addition they have provided staff from a scientific/technical background with an understanding of the relevant legislation in Part II of the RMA Act addressing in-stream values and policy framework within which decisions on determining flow regimes to sustain in-stream values is determined.
- **As a 'checklist' of matters to be considered in managing flows for instream values**, particularly in developing policy (both statutory and non statutory) and assessing resource consent applications for large water takes.
- **Providing a framework/process for policy development in setting flow regimes in rivers** for instream values recognising the actual practical application of the policy framework in the Guidelines is limited as it does not address water allocation for out-of-stream resource use.

- **Documentation which is endorsed by the Ministry for the Environment** that assists Regional Councils by providing support at a national level for the approaches they are adopting in setting flows to provide for instream values.

(iii) Limitations or Perceived Weaknesses of the Flow Guidelines

A number of limitations or perceived weaknesses of the Flow Guidelines, which were identified by regional council during the interviews, were recognised and identified in the Flow Guidelines as limitations of the documents at the time of their release. Accordingly it is considered that they are not so much weaknesses, but rather matters which were recognised by the Ministry as being beyond the scope of the “Flow Guidelines for Instream Values”.

Such limitations include:

- The process for setting flow regimes in rivers only relates to providing for in-stream values and did not address out-of-stream use of the water resource.
- Did not provide guidance on prioritising between in-stream values.
- Did not adequately cover small streams.
- The Guidelines are one-dimensional and only cover managing flows in relation to sustaining in-stream values, and to sustain identified in-stream values, particularly ecological values a range of other factors need to be considered.
- Did not adequately address flow variability.

It is considered these limitations of the Guidelines need to be made more explicit in any further publicity on the Flow Guidelines by the Ministry in the future.

While a number of suggestions were made by interviewees on matters which the Ministry should address in any update of the Flow Guidelines, it is also noted that many of the perceived limitations of the Flow Guidelines address issues of surface water allocation which are beyond the scope of the documents, and accordingly simply updating the Flow Guidelines would not address many of the issues raised by interviewees.

It is also considered that the lack of a clear understanding of the target audience and purpose of the documents were the basis of a number of issues raised by the regional council staff interviewed. As stated above, it appears that Flow Guidelines appear to have provided guidance to policy analysts and scientific/technical staff and also assisted in bridging the information gap between these disciplines.

However a range of comments were received, particularly from scientific/technical staff criticising the Guidelines for a lack of detail in particular that they lacked an in-

depth critical analysis of the technical methods for setting flow regimes. In contracts to this, were comments received stating that the Guidelines are too ‘wordy’ and ‘lengthy’, that they tried to cover ‘too much’ and the documents should be more user-friendly. In association with these comments were recommendations that the Flow Guidelines be simplified and made more ‘pithy’ and that a ‘user- guide’ or similar be developed. In addition it was suggested that assistance be given to people other than regional council staff involved in water management, such as water user committees, community interest groups and iwi including providing them with the information in the Flow Guidelines and offering training and assistance.

In light of this, it is considered any further work on the Guidelines and other associated work needs to consider who the target audience is and the outcome the documents are seeking to achieve.

Another issue raised was that a lack of resources limited Councils ability to implement the procedures and techniques promoted by the Flow Guidelines, including a lack of available and relevant information on the instream values of the rivers and streams in their region necessary to make policy decisions as well as a lack of resources to implement the technical methods being promoted.

(v) Suggestions for Improving the Flow Guidelines and Other Work to assist Regional Council Staff in addressing Water Management Issues.

As discussed above, a range of comments were received on suggestions for updating and improving the Guidelines, however the two most commonly raised issues were the need for further work on allocating water for out-of stream resource use and managing water allocation in small streams. Different opinions were raised on whether these issues should be addressed by incorporating further information into the Flow Guidelines or whether they should be addressed in compendium documents which support the Guidelines.

5.2 RECOMMENDATIONS

The following recommendations have been derived as a result of the findings of this evaluation.

- 1) That the Ministry identify future opportunities for advising people involved water management of the existence of the “Flow Guidelines for Instream Values”.
- 2) That in advising people of the Flow Guidelines that the target audience, intended use and the limitations of the Guidelines be made explicit.
- 3) The Ministry consider updating the Flow Guidelines in particular those parts of the Flow Guidelines which may have become outdated since their release in 1998.

- 4) The Ministry investigate the development of a supporting document looking at Out of Stream Use of the Water Resource and in particular address water allocation techniques for out of stream resource use.
- 5) The Ministry investigate opportunities for assisting Regional Councils in addressing management of water allocation in small streams.
- 6) The Ministry consider, in consultation with scientific/technical staff in regional councils, the value of an independent review of the technical methods recommended for use in the Flow Guidelines, in particular the use of IFIM.

APPENDIX 1
Questionnaire sent to Regional Councils & Unitary Authorities

EVALUATION OF 'FLOW GUIDELINES FOR INSTREAM VALUES'

SAMPLE QUESTIONS

FOR REGIONAL COUNCILS AND UNITARY AUTHORITIES

Name of Interviewee _____

Authority _____

Position in Organisation _____

BACKGROUND

1. What is your Role in addressing Water Management Issues in your Council?
2. What is the Current Status of your Policy Statements / Regional Plans / Non Statutory Documents which address Water Management Issues in your Region?

If a Regional Plan or similar has been prepared in draft, proposed or operative form, then

- (i) What process did you use for issue identification and the determination of objectives and policies for the sustainable management of Instream Values?
- (ii) What management techniques did you adopt to address water allocation issues in your region? (For example: minimum flows, allocation limits, and transferable rights)
- (iii) What techniques or approach did you use to determine the Flow Regime Requirements and how are they expressed in your plans and policy documents (i.e.; rules, non-statutory guidelines)?

If no Regional Plan or Policy Document has been or is being produced, then how is water allocation managed in your Region?

AWARENESS AND USE OF 'FLOW GUIDELINES FOR INSTREAM VALUES'

3. How did you become aware of the "Flow Guidelines For Instream Values" (Instream Flow Guidelines) released by the Ministry for the Environment in 1998 ?
4. Have you read the Instream Flow Guidelines (in part or in full)?
5. What if any Sections of the Instream Flow Guidelines have you used or do you have a particular interest in?

6. How were the Guidelines Used or What Process did they assist in ?

For Example:

- (i) Providing a 'Process' to determine Objectives and Policies for Management of Instream Values in Policy and Plan Development.
- (ii) Providing a Process for the Evaluation of Resource Consent Applications
- (iii) Providing information on techniques and methods to assess and monitor flow requirements required to sustain identified Instream Values.

EVALUATION OF THE EFFECTIVENESS OF 'INSTREAM FLOW GUIDELINES'

7. Did you find the Instream Flow Guidelines useful and relevant ?

If so, which parts of the Instream Flow Guidelines did you find useful and how did they assist you ?

8. What parts of the Guidelines did you find not useful and why ?

9. Are there any Limitations or Constraints you have identified to implementing the 'Process' or 'Methods' outlined in the Guidelines ?

For Example

- (i) Could not understand Content of Guidelines
- (ii) Considered Guidelines to be Too Simplistic / Not Enough Detail to be of assistance.
- (iii) "Process" recommended by Guidelines is too resource intensive/ not cost effective.
- (iv) Scope of the Guidelines is too narrow and does not address a number of key issues in the determination of flow regime requirements for rivers.

SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE 'INSTREAM FLOW GUIDELINES'

10. How do you think the Instream Flow Guidelines could be improved or be made more useful ?

For Example

- (i) Improvements in the Existing Content and Level /Detail of the Guidelines
- (ii) Widening the Scope of the Guidelines to address Additional Matters related to addressing Water Allocation Issues
- (iii) Practical Training and Education on the Content, Use and Application of the Guidelines.

11. What additional work do you think the Ministry for the Environment should undertake that would assist Councils in addressing Water Management Issues ?